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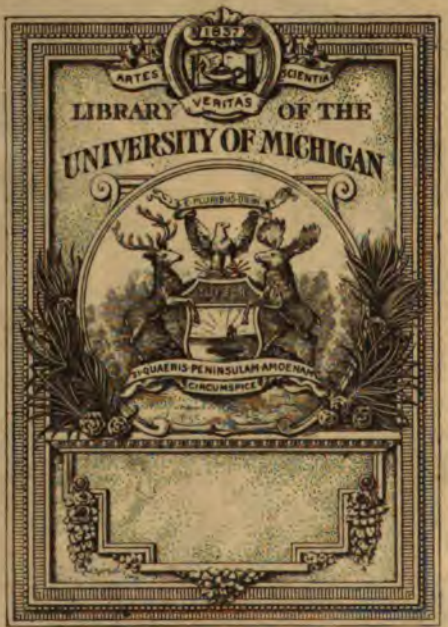

THE GIFT OF

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TUFTS COLLEGE CATALOGUE

1909-1910

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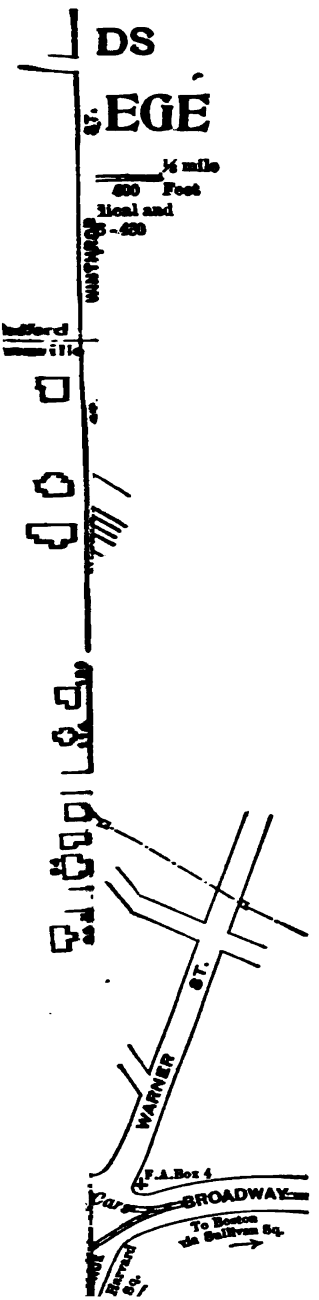


College Buildings

1 West Hall (dormitory)
2 Middle Hall
3 East Hall (dormitory)
4 Curtis Hall (post-office, class rooms, and dormitory)
5 Chemical Laboratory
6 Dean Hall (dormitory)
7 Goddard Gymnasium
8 Barnum Museum (public museum, biological laboratory, and class rooms)
9 Ballou Hall (main offices and class rooms)
10 Goddard Chapel
11 Eaton Memorial Library
12 Paige Hall (Theological School dormitory)
13 Miner Hall (Theological School class rooms)
14 Robinson Hall (Engineering laboratories and class rooms)
15 Power Station and Forge Shop
16 Bromfield-Pearson Building (Engineering shops and class rooms)
17 Metcalf Hall (dormitory for women)
18 Start House (dormitory for women)
19 Women's Gymnasium

Residences

Boston Avenue

391 College Employees

Professors Row

8 President Hamilton
14 Prof. Anthony
20 " Lewis
38 " Durkee
48 Prof. Cushman
80 Zeta Psi House
92 Prof. Fay
98 " Bray
106 " Toussey
114 " Knight
124 " Hooper
128 " Kingsley
134 " Dolbear

Sawyer Avenue

13 Delta Upsilon House
14 Prof. Wade
29 Prof. Ransom
37 Prof. H. G. Chase
45 Prof. Earle; Prof. Tucker

Talbot Avenue

101 Mr. Munro
97 Mr. Morley
65 Prof. Wren

Dearborn Road

16 Prof. Lambert

Curtis Street

80 Prof. Maulsby
94 Alpha Tau Omega House
114 Prof. Harmon
120 Mr. Bruce

Bellevue Street

16 Sigma Tau Alpha House

Fairmount Street

15 The Commons Club

Packard Avenue

120 Prof. Leonard
123 Theta Delta Chi House
126 Prof. Denison

Latin Way

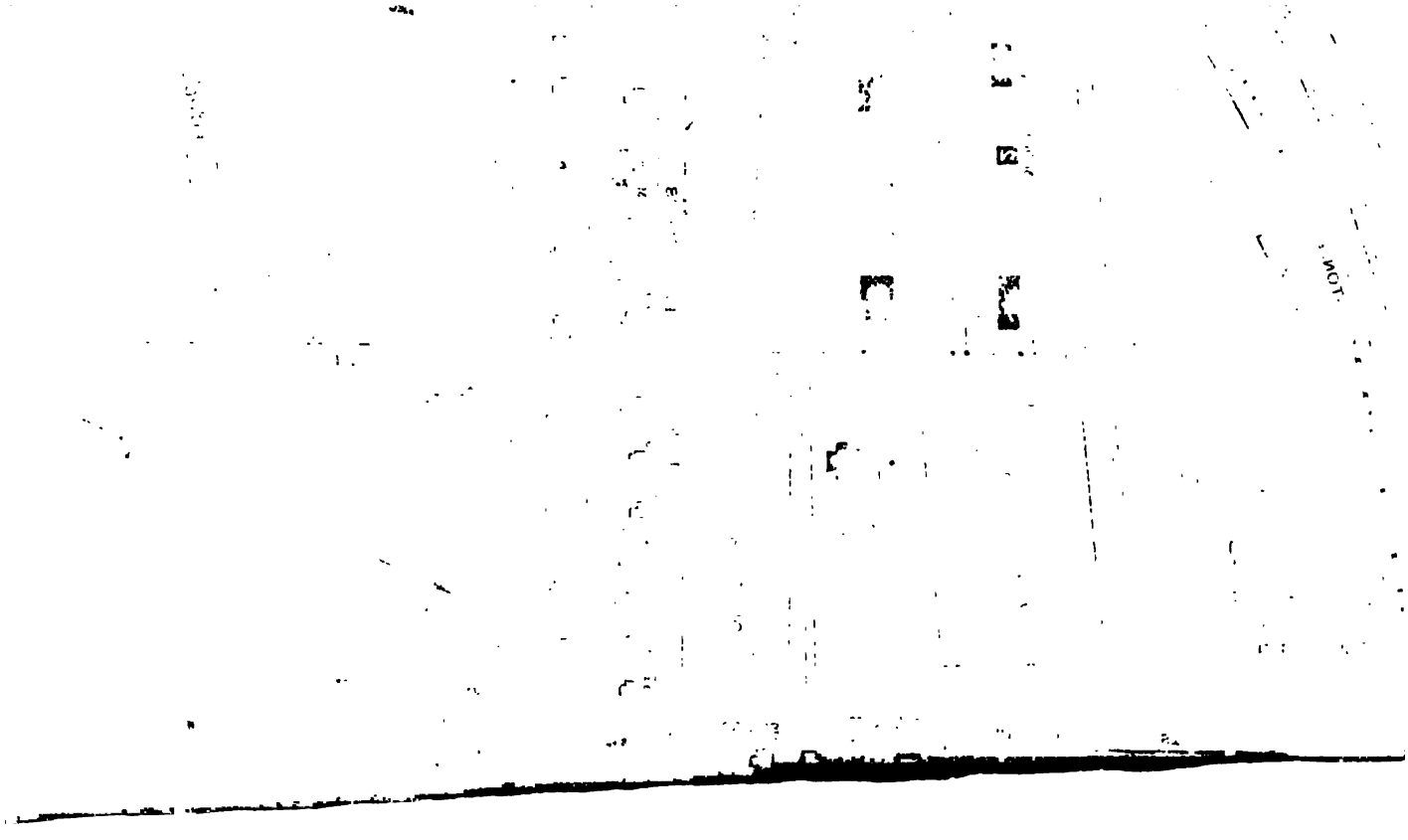
18 Delta Tau Delta House

College Avenue

184 Prof. Bolles

Residences of persons not connected with the College are not indicated.

Post-office address: Tufts College, Mass. Railroad Station: Tufts College, on Southern Division of Boston and Maine Railroad. Electric cars from Boston *via* Sullivan Square. Freight Station: North Somerville, Mass.



Tufts College Catalogue

Tufts College Publications
New Series, Vol. X, No. 1

CATALOGUE

OF

TUFTS COLLEGE

1909—1910

Published in December, 1909, by the Trustees of Tufts College

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Entered at the Post-Office at Tufts College, Mass., as Second-Class Matter

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THE TUFTS COLLEGE PRESS

Calendar — 1910

JANUARY

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Tufts College, about four miles from Boston, is accessible by rail and by electric cars. The railway station, "Tufts College," is on the Southern Division of the Boston and Maine Railroad; but goods sent by freight go to North Somerville, Mass., and should be so addressed. The post-office address is "Tufts College, Mass."

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Calendar

1909

DEC. 22. Christmas recess begins, in the Department of Arts and Sciences, Wednesday, 12.45 P.M.

DEC. 27. Christmas recess begins, Medical and Dental Schools, 1 P.M.

1910

JAN. 3. Christmas recess ends in the Department of Arts and Sciences Monday, 2 P.M.; in the Medical and Dental Schools 9 A.M.

JAN. 29, 31, FEB. 1, 2. Mid-year examinations in the Department of Arts and Sciences

FEB. 5. End of the first half-year in the Department of Arts and Sciences, Saturday

FEB. 7. Second half-year in the Department of Arts and Sciences begins, Monday. Registration

FEB. 8. Regular exercises begin in the Department of Arts and Sciences, Tuesday, 8.30 A.M.

FEB. 22. Washington's Birthday, Tuesday. College exercises are suspended.

APR. 3–9. Spring recess in the Medical and Dental Schools

APR. 13. Spring recess in the Department of Arts and Sciences begins, Wednesday evening

APR. 20. Spring recess ends, Wednesday evening

MAY 13. Goddard Prize Reading, Friday, 8 P.M.

MAY 14. Senior Theses in Engineering School must be filed at the office of the Dean before 5 P.M.

MAY 25 to 28. Senior examinations in Engineering School

MAY 30. Memorial Day, Monday. College exercises are suspended

JUNE 6, 7, 8, 9. Final examinations in the Department of Arts and Sciences

JUNE 6. Entrance Examinations at the Medical and Dental Schools, Monday, 10 A.M.

JUNE 10. Class Day, Friday

JUNE 12. Baccalaureate Sermon, Sunday, 3.30 P.M.

JUNE 15. Fifty-fourth Annual Commencement, Wednesday

First Examinations for Admission to the Department of Arts and Sciences

JUNE 16. Algebra, 9 to 10.30 A.M.; English, 10.30 A.M. to 12.30 P.M.; Plane Geometry, 2 to 4 P.M.; Physics, 4 to 5 P.M.; Drawing, 4 to 6 P.M.

JUNE 17. Elementary and Advanced Latin, 9 to 12 A.M.; Solid Geometry, 9 to 11 A.M.; Natural History (two subjects), 11 A.M. to 1 P.M.; History, 2 to 4 P.M.; Chemistry, 4 to 5 P.M.

JUNE 18. Elementary and Advanced French, 9 to 11 A.M.; Elementary and Advanced German, 11 A.M. to 12.30 P.M.; Elementary and Advanced Greek, Advanced Algebra and Trigonometry, 2 to 5 P.M.

Summer Vacation, Fourteen Weeks

Second Examination for Admission to the Department of Arts and Sciences

SEPT. 17. Elementary and Advanced French, 9 to 11 A.M.; Elementary and Advanced German, 11 A.M. to 12.30 P.M.; Elementary and Advanced Greek, Advanced Algebra and Trigonometry, 2 to 5 P.M.

SEPT. 19. Algebra, 9 to 10.30 A.M.; English, 10.30 A.M. to 12.30 P.M. Plane Geometry, 2 to 4 P.M.; Physics, 4 to 5 P.M.; Drawing, 4 to 6 P.M.

SEPT. 20. Elementary and Advanced Latin, 9 to 12 A.M.; Solid Geometry, 9 to 11 A.M.; Natural History (two subjects), 11 A.M. to 1 P.M.; History, 2 to 4 P.M.; Chemistry, 4 to 5 P.M.

SEPT. 12. Fall examinations for the removal of conditions, in the Medical and Dental Schools, begin, 10 A.M.

SEPT. 19. Entrance examinations at the Medical and Dental Schools, Monday, 10 A.M.

SEPT. 22. College year begins, Thursday morning
Registration of all students in the Department of Arts and Sciences

SEPT. 23. All classes meet for announced periods, Friday

SEPT. 24. Regular College exercises begin, Saturday

SEPT. 25. Dental Infirmary opens, 9 A.M.

SEPT. 28. Lectures begin in Medical and Dental Schools, Wednesday, 3 P.M.

OCT. 2. Russell Lecture, Sunday, 3.30 P.M.

OCT. 8. Registration closes in Medical and Dental Schools, 6 P.M.

NOV. 16. Announcement of Academic Honors, 12 M., Wednesday

NOV. 23. Thanksgiving recess begins in all Departments, Wednesday 12.45 P.M.

NOV. 27. Thanksgiving recess ends in all Departments, Sunday evening

DEC. 21. Christmas recess begins, in the Department of Arts and Sciences, Wednesday, 12.45 P.M.

DEC. 24. Christmas recess begins, Medical and Dental Schools, 1 P.M.

1911

JAN. 2. Christmas recess ends in the Department of Arts and Sciences Monday, 2 P.M.; in the Medical and Dental Schools 9 A.M.

JAN. 28, 30, 31, FEB. 1. Mid-year examinations in the Department of Arts and Sciences

FEB. 4. End of the first half-year in the Department of Arts and Sciences, Saturday

FEB. 6. Second half-year in the Department of Arts and Sciences begins, Monday. Registration

Historical Sketch

Tufts College was established under a charter granted on the twenty-first day of April, 1852, by the General Court of Massachusetts. Under this charter, as later amended, the College is empowered "to confer such degrees as are usually conferred by colleges in New England." Its organization now comprises the School of Liberal Arts, the Engineering School, the Graduate School, the Crane Theological School, the Medical School, and the Dental School. The School of Liberal Arts prepares for the degrees of Bachelor of Arts and Bachelor of Science. Work in the Engineering School leads to the degree of Bachelor of Science in Engineering. The Graduate School offers the degrees of Master of Arts and Master of Science. The course in the Theological School leads to the degree of Bachelor of Sacred Theology, that in the Medical School to the degree of Doctor of Medicine, and that in the Dental School to the degree of Doctor of Dental Medicine.

The Foundation.—The movement resulting in the founding of the College was set on foot in 1847, through the efforts of the Rev. Thomas J. Sawyer, of New York, the Rev. Hosea Ballou, 2d, of Medford, and the Rev. Thomas Whittemore, of Cambridgeport. After much consideration, the work of raising a fund of one hundred thousand dollars for a foundation was undertaken, under the direction of the Rev. Otis A. Skinner, of Boston. About sixty thousand dollars was obtained in money. Sylvanus Packard gave his bond for twenty thousand dollars additional, and Charles Tufts gave twenty acres of land on Walnut Hill, embracing the present site of the College. Mr. Tufts announced his intention of increasing his gift of land to more than one hundred acres, and thus became the largest benefactor of the young institution, which accordingly received his name. Mr. Packard was a Boston merchant, who from the beginning made the College a peculiar care, and bequeathed to

it his entire fortune. Among other benefactors who may be numbered among the founders of the College were Oliver Dean, who gave it ninety thousand dollars, and Thomas A. Goddard, whose gifts, though unobtrusive, were constant. Mrs. Goddard continued the generosity of her husband, and at her death made a substantial bequest to the College. Dr. William J. Walker also made gifts and bequests amounting to nearly three hundred thousand dollars.

While the College owed its beginning to the effort and the support of members of the Universalist denomination, it was provided by the Legislature in the charter that

> "No instructor in said college shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said college, on account of the religious opinions he may entertain."

This provision has always been interpreted by the Trustees and Faculty in its broadest sense. The non-sectarian character of the work of the College is amply shown by the membership of its Faculty and student body. The truth, and not the maintenance of any religious or political doctrine, has been the aim of its research and its instruction.

The Department of Arts and Sciences.— The first Faculty meeting was held October 9, 1854, when there were in College students forming the Sophomore and the Freshman class. The only building at that time was the main College Building, now known as Ballou Hall. The next building to be erected was a small brick dormitory, now Middle Hall. The large dormitory known as East Hall was the next addition to the group, and in 1872 West Hall was opened to students. It was ten years before building operations were renewed by the College. The original Faculty numbered five. The first class, of three members, was graduated in 1857.

At the outset, provision was made for a course of study leading to the degree of Bachelor of Arts. The only feature of its work peculiar to Tufts College in these years of its beginning

was the attention given to the study of history. The first President of the College, the Rev. Hosea Ballou, 2d, D.D., was likewise Professor of History and of Intellectual Philosophy, and gave instruction in history remarkable alike for its quantity and quality, at a time when the study was hardly recognized in American colleges.

Dr. Ballou was succeeded in the presidency by the Rev. Alonzo Ames Miner, D.D., LL.D., who was inaugurated in 1862, and continued in office until 1875, resigning in February of that year. Dr. Miner's incumbency was marked by large financial additions to the College, and by the further growth of a broad and scholarly spirit.

In March, 1875, the Rev. Elmer Hewitt Capen, D.D., was elected to the presidency of the College, vacated by the resignation of President Miner, and he was inaugurated on the second day of June. Dr. Capen's administration, which was characterized by the expansion of the College to university proportions, and was marked by the material and intellectual advance of all departments, was terminated by his death, March 22, 1905.

Rev. F. W. Hamilton, D.D., LL.D., was appointed acting president in 1905, and was inaugurated as president, June 19, 1906.

The Engineering courses were begun in 1869 with a department of Civil Engineering. The great development of electrical science was promptly recognized, and a department of Electrical Engineering was opened to students in 1882, a professorship in the subject being established in 1890. This side of the College work had rapid development: in 1894 the field was broadened by the addition of a course in Mechanical Engineering, and in 1898 by one in Chemical Engineering. In these courses effort has always been made to give thorough practical training. The will of the late Henry B. Pearson, founding the Bromfield-Pearson School, and putting it into the hands of the Trustees of Tufts College to administer, provided a thoroughly-equipped building for technical instruction, of great value in drawing, pattern-making, and in machine and

forge work. The Bromfield-Pearson building was completed in the fall of 1894. Robinson Hall, completed in 1900, gives to the technical courses a modern building with every facility for their work. It was given in memory of the late Charles Robinson, LL. D., sometime President of the Trustees, by his heirs.

In 1881 the late Phineas T. Barnum gave fifty-five thousand dollars for the establishment of the Barnum Museum of Natural History, and by his last will he bequeathed forty thousand dollars more. The main Museum building was completed in 1884. The west wing, containing the new biological laboratories, was erected in 1894. The years 1882 and 1883 saw the completion of Goddard Chapel, given by Mrs. Mary T. Goddard as a memorial of her husband, the first treasurer of the College. Goddard Gymnasium, a gift from the same source, was also completed in 1883. The gymnasium has been enlarged and transformed into what is practically a new building. Dean Hall was erected in 1887 from funds bequeathed by the late Oliver Dean. In the College year 1894-95 two new buildings were opened, in addition to the west wing of the Barnum Museum. These were the Chemical building and Curtis Hall, containing students' rooms, class rooms, and the post-office.

The gift of one hundred thousand dollars from Mr. Andrew Carnegie secured the erection of an adequate library building, called the Eaton Memorial Library, which was begun in 1905, and put into active service in 1908.

The development of the College in its internal life has been the notable fact of recent years. In 1866 the degree of Bachelor of Philosophy was offered to students who should pursue a prescribed course of two years, the object being to provide for those who had been prepared only in English subjects. This course was maintained until 1875, when it was changed to a course of four years. The requirements for admission were then made the same as for the regular course, except that Greek as a condition of entrance was omitted, and an amount of work in French or German, considerably less than its equivalent, was

substituted. The degree of Bachelor of Philosophy has more and more fallen into disuse, in favor of Bachelor of Arts. In 1891 a new course of study, leading to the degree of Bachelor of Arts, was offered, with an entrance requirement believed to be fully the equivalent of the Greek, in two modern languages. This was one important step taken by the College toward the broadening of its opportunities, but it soon proved to be insufficient. There had been a steady growth for many years in the amount of work done, and in the number of departments of learning represented. Two new departments had been instituted in 1892, in response to the tendencies of educational development,—those of Biology and History. Departments of Music and Philosophy have since been added, the work in Political Science has been broadened, and provision made for the study of Public Law. In the fall of 1893 it seemed possible to take another step and to put into operation the present plan of work, which is believed to be an approach to a rational co-ordination and connection of the college and university systems. The principle which governed this adjustment of the College curriculum has been applied to the entrance requirements.

There were opened in 1895 courses of four years each in Biology, Chemistry, General Science, and Medical Preparatory work, leading to the degree of Bachelor of Science, and accessible to graduates of all good high schools. The course in Biology was withdrawn in 1905. Bachelors of Science may, if they desire, go on to the attainment of the degree of Bachelor of Arts.

In response to a pressing demand the college was, in the summer of 1892, opened to women on the same terms as to men. In the fall of 1894 there was provided, for the accommodation of women students, Metcalf Hall, the gift of Albert Metcalf, of Newton. The Start House also offers home-like rooms for women students.

The Professional Schools.—The will of Mr. Packard re-

quired that a professor of Christian Theology should be maintained from the income of funds bequeathed by him. The Rev. Thomas J. Sawyer, D.D., was elected Packard Professor in 1869. This was the beginning of the Theological School. In 1882 the school had developed so that its Faculty received a definite organization, and Dr. Sawyer became the first Dean, retaining the office until his retirement as Packard Professor Emeritus in 1892. He was succeeded by the present Dean, Rev. Dr. Charles H. Leonard. From the erection of West Hall until the completion of the separate buildings of the school, the western side of West Hall was occupied by the Divinity School. In 1892, by the gift of ex-President Miner, the school was provided with Miner Hall, containing the library, class rooms, chapel, and reception room; and at the same time, largely through the efforts of the Dean, the money was obtained to build Paige Hall, a dormitory for students of the Theological School.

In 1903 a five-year course was offered to students of divinity, combining subjects required for a proper professional equipment with studies that look toward liberal culture. This course is now arranged to cover six years. At its successful completion the degrees A.B. and B.D. are both awarded. There is also a four-year course, leading to B. D.

In 1906 the name of the Divinity School was changed to the Crane Theological School, in recognition of a gift of one hundred thousand dollars from the estate of the late Thomas Crane of New York, whose son, Albert Crane, '63, thus carried out the expressed purpose of his father.

In 1893 Tufts College met what seemed to be a need of the community by opening the Tufts Medical School. The growth of the school in efficiency and numbers justified its institution. The course is four years in length, and, as in other departments of the College, women stand upon the same terms as men.

The Medical School found its complement in the Tufts Dental School, organized in 1899 by the absorption of the Boston Dental College, which was incorporated in 1868, and has a

numerous body of alumni. The equipment, funds, and good will of this school passed to Tufts College.

Administration.—The control of the College is vested by the charter in a self-perpetuating body of Trustees, not to exceed thirty in number. As the College has matured the number of its alumni upon the Board of Trustees has steadily increased. To give the Alumni as a whole a direct represenation in the administration, a Board of Overseers was instituted, which continued from 1899 till 1907. At this time an amendment to the college charter was passed by the Massachusetts legislature, permitting the election of a certain proportion of Trustees from and by the alumni themselves.

THE COLLEGE CHARTER

SECTION 1. B. B. Mussey, Timothy Cotting, Richard Frothingham, Jr., their associates and successors, are hereby constituted a body corporate by the name of the Trustees of Tufts College, in Medford, and they and their successors, and such as shall be duly elected members of said corporation, shall be and remain a body corporate by that name forever. And for the orderly conducting of the business of said corporation, the said Trustees shall have power and authority, from time to time, as occasion may require, to elect a President, Vice-President, Secretary and Treasurer, and such other officers of said corporation as may be found necessary, and to declare the duties and tenures of their respective offices; and also to remove any Trustee from the same corporation, when in their judgment he shall be rendered incapable, by age or otherwise, of discharging the duties of his office, or shall neglect or refuse to perform the same; and also, from time to time, to elect new members of the said corporation; provided, nevertheless, that the number of members shall never be greater than thirty.

SEC. 2. The said corporation shall have full power and authority to determine at what times and places their meetings shall be holden, and the manner of notifying the Trustees to convene at such meetings, and also, from time to time, to elect a President of said College, and such professors, tutors, instructors, and other officers of the said College as they shall judge most for the interest thereof, and to determine the duties, salaries, emoluments, responsibilities, and tenures of their several offices. And the said corporation are further empowered to purchase or erect, and keep in repair, such houses and other buildings as they shall judge necessary for the said College; and also to make and ordain, as occasion may require, reasonable rules, orders, and by-laws, not repugnant to the Constitution

and Laws of this Commonwealth, with reasonable penalties, for the good government of the said College, and for the regulation of their own body; and also to determine and regulate the course of instruction in said College, and to confer such degrees as are usually conferred by colleges in New England; provided, nevertheless, that no corporate business shall be transacted at any meeting unless one-third, at least, of the Trustees are present.

SEC. 3. The said corporation may have a common seal, which they may alter or renew at their pleasure, and all deeds sealed with the seal of said corporation, and signed by their order, shall, when made in their corporate name, be considered in law as the deeds of said corporation; and said corporation may sue and be sued in all actions, real, personal, or mixed; and may prosecute the same to final judgment and execution by the name of the Trustees of Tufts College; and said corporation shall be capable of taking and holding in fee simple, or any less estate, by gift, grant, bequest, devise, or otherwise, any lands, tenements, or other estate, real or personal, provided, that the clear annual income of the same shall not exceed two hundred thousand dollars.*

SEC. 4. The clear rents and profits of all the estate, real and personal, of which the said corporation shall be seized and possessed, shall be appropriated to the endowment of said College in such manner as shall most effectually promote virtue and piety, and learning in such of the languages, and of the liberal and useful arts and sciences, as shall be recommended from time to time by the said corporation, they conforming to the will of any donor or donors in the application of any estate which may be given, devised, or bequeathed, for any particular object connected with the College.

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SEC. 7. The granting of this Charter shall never be considered as any pledge on the part of the Government that pecuniary aid shall hereafter be granted to the College.

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DEPARTMENT OF ARTS AND SCIENCES

Requirements for Admission

TO THE

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CRANE THEOLOGICAL SCHOOL

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* The Faculty of Arts and Sciences consists of the Faculties of the School of Liberal Arts, the Engineering School, the Graduate School, and the Crane Theological School, constituted one body for the discharge of certain administrative functions.

Requirements for Admission

Candidates for admission to the Department of Arts and Sciences must have received adequate preparation in certain subjects falling in two groups, known respectively as the Primary and the Secondary Group.

The Primary Group

Elementary English;
*An Elementary Foreign Language, ancient or modern;
Elementary History;
Elementary Algebra;
Plane Geometry.

Candidates for admission must show adequate preparation in all the subjects of the Primary Group, and in a certain part of the subjects of the Secondary Group, depending upon the degree in view. No subject offered in the Primary Group can be counted in the Secondary Group.

The Secondary Group

ELEMENTARY

Greek, 4	Geology, 1 or 2
Latin, 6	Physiology, 1 or 2
French, 4	Mechanical Drawing, 1
German, 4	Freehand Drawing, 1
Chemistry, 1	Shop Work, 1
Physics, 1	Economics, 1
Botany, 1 or 2	Musical Appreciation, 1
Zoology, 1 or 2	Music (Harmony), 1 or 2

*Candidates for the degree of Bachelor of Science in General Science, in Chemistry, or in the Medical Preparatory Course, must present Elementary German.

Engineering students will find it an advantage to present both French and German. Preparatory work in Modern Languages above the elementary requirements may be counted toward the degree of B.S. in Engineering (see pages 41 to 45). But college credit for work done in the secondary school is given only on examination or after the student has satisfactorily continued the subject in college.

ADVANCED*

English, 2	Trigonometry, 1
Greek, 2	Solid Geometry, 1
Latin, 2	Chemistry, 1
French, 2	Physics, 1
German, 2	Counterpoint, 1
History, 2	Pianoforte, Voice, or Violin, 1
Algebra, 1	

Candidates for the degree of Bachelor of Arts or Bachelor of Divinity must submit, in addition to the five subjects of the Primary Group, a selection of subjects from the Secondary Group aggregating *fourteen* units, according to the valuation indicated above. Candidates for any one of the courses in Science, including those in Engineering, must submit from the Secondary Group subjects aggregating *six* units.

The following conditions are to be observed:—

1. The fourteen units for the course leading to A.B., or that leading to B.D., must include those representing one advanced ancient language.

2. No subject classified as "advanced" shall be offered without the corresponding elementary subject.†

3. The six units for any course in engineering must include that representing solid geometry.

Detailed information concerning the amount and character of the work demanded in preparation will be found on the following pages.

Detailed Statement of Requirements

Elementary English.

Preparation in English has two main objects: (1) command of correct and clear English, spoken and written; (2) ability to read with accuracy, intelligence, and appreciation.

The first object requires instruction in grammar and composition. English grammar should ordinarily be reviewed in the

*The credit for advanced subjects, as here given, is in addition to the credit for the corresponding elementary subjects.

†Thus Advanced Latin calls for preparation as well in Elementary Latin, and includes the credit for both,—8 points.

secondary school; and correct spelling and grammatical accuracy should be rigorously exacted in connection with all written work during the four years. The principles of English composition governing punctuation, the use of words, paragraphs, and the different kinds of whole composition, including letter-writing, should be thoroughly mastered; and practice in composition, oral as well as written, should extend throughout the secondary school period. Written exercises may well comprise narration, description, and easy exposition and argument based upon simple outlines. It is advisable that subjects for this work be taken from the student's personal experience, general knowledge, and studies other than English, as well as from his reading in literature. Finally, special instruction in language and composition should be accompanied by concerted effort of teachers in all branches to cultivate in the student the habit of using good English in his recitations and various exercises, whether oral or written.

The second object is sought by means of two lists of books, headed respectively *reading* and *study*, from which may be framed a progressive course in literature covering four years. In connection with both lists, the student should be trained in reading aloud and be encouraged to commit to memory some of the more notable passages, both in verse and in prose. As an aid to literary appreciation, he is further advised to acquaint himself with the most important facts in the lives of the authors whose works he reads, and with their place in literary history.

GROUP A

READING.— The aim of this course is to foster in the student the habit of intelligent reading, and to develop a taste for good literature, by giving him a first-hand knowledge of some of its best specimens. He should read the books carefully, but his attention should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads.

*For Students Entering in 1910 and 1911**

Shakespeare's The Merchant of Venice and Julius Cæsar;

* See footnote at bottom of next page.

the Sir Roger de Coverley Papers in the Spectator; Franklin's Autobiography; Scott's The Lady of the Lake and Ivanhoe; Hawthorne's The House of the Seven Gables; Macaulay's Lays of Ancient Rome; Tennyson's Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur; Dickens's A Tale of Two Cities.

*For Students Entering in 1912**

Shakespeare's As You Like It and Julius Cæsar; Franklin's Autobiography; Goldsmith's The Deserted Village; Dickens's A Tale of Two Cities; George Eliot's Silas Marner; Irving's Sketch Book; Scott's The Lady of the Lake; Byron's Mazeppa and The Prisoner of Chillon; Macaulay's Lays of Ancient Rome.

For Students Entering in 1913, 1914, and 1915

With a view to large freedom of choice, the books provided for reading are arranged in the following groups, from which at least ten units are to be selected, two from each group. Each unit is set off by semicolons.

I. The Old Testament, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; the Odyssey, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; the Iliad, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI; Virgil's Æneid. The Odyssey, Iliad, and Æneid should be read in English translations of recognized literary excellence.

For any unit of this group a unit from any other group may be substituted.

II. Shakespeare's Merchant of Venice; Midsummer Night's

* The books for the classes entering in 1909, 1910, 1911, and 1912, are selected from the lists adopted by the Conference on Uniform Entrance Requirements in English, at meetings held in Newark, N. J., February 22, 1905, and February 22, 1908. Candidates may make other selections from that list, provided they give notice of their intention to present these books on or before the first day of February preceding the examination. The list will be furnished to secondary schools upon application to the Secretary of Tufts College.

Dream; As You Like It; Twelfth Night; Henry the Fifth; Julius Cæsar.

III. Defoe's Robinson Crusoe, Part I; Goldsmith's Vicar of Wakefield; either Scott's Ivanhoe, or Scott's Quentin Durward; Hawthorne's House of the Seven Gables; either Dickens's David Copperfield, or Dickens's Tale of Two Cities; Thackeray's Henry Esmond; Mrs. Gaskell's Cranford; George Eliot's Silas Marner; Stevenson's Treasure Island.

IV. Bunyan's Pilgrim's Progress, Part I; The Sir Roger de Coverley Papers in the Spectator; Franklin's Autobiography (condensed); Irving's Sketch Book; Macaulay's Essays on Lord Clive and Warren Hastings; Thackeray's English Humourists; Selections from Lincoln, including at least the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the Last Public Address, and Letter to Horace Greeley, along with a brief memoir or estimate; Parkman's Oregon Trail; either Thoreau's Walden, or Huxley's Autobiography and selections from Lay Sermons, including the addresses on Improving Natural Knowledge, A Liberal Education, and A Piece of Chalk; Stevenson's Inland Voyage and Travels with a Donkey.

V. Palgrave's Golden Treasury (First Series), Books II and III, with especial attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's Elegy in a Country Churchyard, and Goldsmith's Deserted Village; Coleridge's Ancient Mariner, and Lowell's Vision of Sir Launfal; Scott's Lady of the Lake; Byron's Childe Harold, Canto IV, and Prisoner of Chillon; Palgrave's Golden Treasury (First Series), Book IV, with especial attention to Wordsworth, Keats, and Shelley; Poe's Raven, Longfellow's Courtship of Miles Standish, and Whittier's Snow Bound; Macaulay's Lays of Ancient Rome, and Arnold's Sohrab and Rustum; Tennyson's Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur; Browning's Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa — Down in the City.

GROUP B*

STUDY.— This part of the requirement is intended as a natural and logical continuation of the student's earlier reading, with greater stress laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions. For this close reading, a play, a group of poems, an oration, and an essay, are provided, as follows:

For Students Entering in 1909, 1910, and 1911

Shakespeare's Macbeth; Milton's Lycidas, Comus, L'Allegro, and Il Penseroso; either Burke's Speech on Conciliation with America, or both Washington's Farewell Address and Webster's First Bunker Hill Oration; either Macaulay's Life of Johnson, or Carlyle's Essay on Burns.

For Students Entering in 1912

Shakespeare's Macbeth; Milton's Comus, L'Allegro, and Il Penseroso, or Tennyson's Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur; either Burke's Speech on Conciliation with America, or both Washington's Farewell Address and Webster's First Bunker Hill Oration; either Macaulay's Life of Johnson, or Carlyle's Essay on Burns.

For Students Entering in 1913, 1914, 1915

Shakespeare's Macbeth; Milton's L'Allegro, Il Penseroso, and Comus; either Burke's Speech on Conciliation with America, or both Washington's Farewell Address and Webster's First Bunker Hill Oration; either Macaulay's Life of Johnson, or Carlyle's Essay on Burns.

Examination.

However accurate in subject-matter, no paper will be considered satisfactory if seriously defective in punctuation, spelling, or other essentials of good usage.

* The important changes that go into effect with 1913 consist of a greater emphasis upon formal grammar, rhetorical structure, and the study of details in the books under Group B. Meanwhile, schools desiring to be acquainted with the precise requirements for 1910, 1911, and 1912, are advised to send for the catalogue of 1908-09. The older form of statement is omitted from this catalogue to save space. But a student adequately prepared according to the requirements here printed will have no difficulty in meeting the earlier requirements.

The examination will be divided into two parts, one of which may be taken as a preliminary, and the other as a final.

The first part of the examination will be upon ten units chosen, in accordance with the plan described earlier, from the lists headed *reading;* and it may include also questions upon grammar and the simpler principles of rhetoric, and a short composition upon some topic drawn from the student's general knowledge or experience. On the books prescribed for reading, the form of the examination will usually be the writing of short paragraphs on several topics which the candidate may choose out of a considerable number. These topics will involve such knowledge and appreciation of plot, character-development, and other qualities of style and treatment as may be fairly expected of boys and girls. In grammar and rhetoric, the candidate may be asked specific questions upon the practical essentials of these studies, such as the relation of the various parts of a sentence to one another, the construction of individual words in a sentence of reasonable difficulty, and those good usages of modern English which one should know in distinction from current errors.

The second part of the examination will include composition and those books comprised in the list headed *study*. The test in composition will consist of one or more essays, developing a theme through several paragraphs, the subjects to be drawn from the books prescribed for *study*, from the candidate's other studies, and from his personal knowledge and experiences quite apart from reading. For this purpose the examiner will provide several subjects, perhaps five or six, from which the candidate may make his own selections. The test on the books prescribed for study will consist of questions upon their content, form, and structure, and upon the meaning of such words, phrases, and allusions as may be necessary to an understanding of the works and an appreciation of their salient qualities of style. General questions may also be asked concerning the lives of the authors, their other works, and the periods of literary history to which they belong.

Advanced English. *Two units.*

One of the following: —

1. A detailed study of a single period of English literature, and of not fewer than three authors belonging to it.

2. Old English (Anglo-Saxon): chiefly simple prose and grammar.

3. Chaucer: the Prologue, the Knightes Tale, and the Nonne Preestes Tale, including vocabulary, inflection, and prosody.

Adequate preparation for any one of the topics under Advanced English requires the equivalent of at least three school periods a week for one year. Credit in Advanced English will be given only on examination.

Elementary German. *Four units.*

It is expected that the candidate will have studied the subject in a systematic course of at least five periods a week for two years, and that special care will have been given to pronunciation and to translating into clear, idiomatic English.

The examination will consist of two parts: —

(*a*) The translation into German of easy English sentences, to test the candidate's knowledge of the following subjects: the declension of articles, adjectives, pronouns, and nouns; the conjugation of verbs; the prepositions and cases which they govern; the simpler uses of modal auxiliaries; the elementary rules of syntax and word order.

(*b*) The translation at sight of ordinary German prose or verse. It is believed that the requisite facility may be acquired by the reading of from two to three hundred pages of standard prose and poetry, with preference given to the narrative style in contemporary authors.

[The following list is made up from works suitable for preparatory reading in Elementary German: Wildenbruch, Das edle Blut; Heyse, Niels mit der offenen Hand; Arnold, Fritz auf Ferien; Gerstäcker, Irrfahrten; Storm, In St. Jürgen; Riehl, Der Fluch der Schönheit; Meyer, Das Amulett; Schiller, Wilhelm Tell; selections from Hatfield's German Lyrics and Ballads, or from Klenze's Deutsche Gedichte.]

Advanced German. *Two units.*

It is expected that the candidate will have added to the work

done in preparation for Elementary German a further course equivalent to five hours a week for a year. He should also acquire the ability to follow a recitation conducted in German, and to answer in that language questions asked by the instructor.

The examination will consist of two parts: —

(*a*) The translation into German of an easy passage of English prose. This will presuppose a thorough knowledge of the essentials of German syntax, and especially of the uses of the subjunctive and infinitive moods. Particular attention should be paid to the elements of word-formation, and the force of prefixes and suffixes. Proficiency may also be tested by questions on these topics.

(*b*) The translation at sight of standard German. It is believed that the requisite facility can be acquired by reading, in addition to the amount mentioned under "Elementary German," at least three hundred pages of classical and contemporary prose and dramatic verse.

[The following books are suitable in preparation for the Advanced examination: Eichendorff, Aus dem Leben eines Taugenichts; Keller, Kleider machen Leute; Hauff, Lichtenstein; Freytag, Aus dem Staat Friedrichs des Grossen; Lessing, Minna von Barnhelm; Schiller, Die Jungfrau von Orleans, Ballads, Die Geschichte des dreissigjährigen Krieges; Fulda, Der Talisman.]

Elementary French. *Four units.*

It is expected that the candidate will have studied the subject in a systematic course of at least five periods a week for two years, and that special care will have been given to pronunciation and to translating into clear, idiomatic English.

The examination will consist of two parts: —

(*a*) The translation into French of English sentences or a short passage of easy connected prose, to test the candidate's familiarity with elementary grammar, especially the following subjects: the conjugation of the regular and the most frequently recurring irregular verbs; the forms and positions of personal pronouns: the uses of the other pronouns and of possessive, demonstrative, and interrogative adjectives; the inflection of

nouns and adjectives for gender and number, except rare cases; the partitive construction.

(*b*) The translation at sight of ordinary French. It is believed that the requisite facility may be acquired by the reading of not less than four hundred pages of standard prose and verse; with preference given to narrative style of contemporary authors.

[The following list is made up from works suitable for preparatory reading in Elementary French: Daudet's easier short stories; Erckmann-Chatrian's stories; Verne's stories; Enault's Le Chien du Capitaine; Foa's Contes biographiques and Le petit Robinson; Labiche and Martin's La poudre aux yeux and Le voyage de M. Perrichon; Laurie's Memoires d'un collégien; Féval's La fée des grèves; Merimée's Colomba.]

Advanced French. *Two units.*

It is expected that the candidate will have added to the work done in preparation for Elementary French a further course equivalent to five hours a week for a year. He should also acquire the ability to follow a recitation conducted in French, and to answer in that language questions asked by the instructor.

The examination will consist of two parts: —

(*a*) The translation into French of a passage of ordinary English prose, not only as a test of vocabulary, but of the candidate's familiarity with the essentials of French syntax, especially with the uses of modes and tenses, with word formation, and the common idiomatic phrases. Proficiency may also be tested by questions on these topics.

(*b*) The translation at sight of standard French. It is believed that the requisite facility can be acquired by reading, in addition to the amount mentioned under "Elementary French," at least six hundred pages of standard prose, selected from not less than five different authors.

[The following books are suitable in preparation for the Advanced examination: About's stories; Augier and Sandeau's Le gendre de M. Poirier; Béranger's poems; Coppée's poems; La Brète's Mon oncle et mon curé; Daudet's La Belle-Nivernaise; A. France's Le crime de Sylvestre Bonnard and Le livre de mon ami; Sandeau's Mademoiselle de la Seiglière; Thiers's L'expédition de Bonaparte en Egypte; Vigny's La canne de jonc.]

Elementary Latin. *Six units.*

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for three years. It will consist of three parts:—

(*a*) The translation at sight of passages of simple Latin prose and verse. The passages must be rendered into simple and idiomatic English.

(*b*) A thorough examination on Cicero's Orations against Catiline, II, III, IV, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms.

(*c*) The translation into Latin prose of simple English sentences, based on the prose works ordinarily read.

The reading in preparation for Elementary Latin should include Cæsar's Gallic War (Books I—IV); Cicero's four Orations against Catiline, and Oration for Archias; and, if possible, two thousand or more lines of Vergil, or of Ovid and Vergil; or the full requirement in Vergil (see Advanced Latin) may be presented in place of Cicero. Equivalents will be accepted.

Advanced Latin. *Two units.*

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for four years. It will consist of two parts: —

(*a*) The translation at sight of passages of Latin prose and verse, with questions on the ordinary forms, constructions, and idioms, and especially on prosody.

(*b*) The translation into Latin prose of a passage of connected narrative.

Candidates for eight points in Latin must also take certain designated parts of the elementary paper.

The reading in preparation for advanced Latin should include Cæsar's Gallic War (Books I—IV); Cicero, six orations, (including the Manilian Law) Vergil's Æneid (six books). Equivalents will be accepted, but prose must not be substituted for verse.

Practice in reading at sight, and constant training in Latin Composition should form an important part of the preparation.

Advanced Latin Composition cannot be accepted at the Preliminary Examination.

Elementary Greek. *Four units.*

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course of at least five periods a week for two years. It will consist of two parts, which cannot be taken separately: —

(*a*) The translation at sight of passages of simple Attic prose.

(*b*) A thorough examination on Book II of Xenophon's Anabasis, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms of the language.

Before taking the elementary examination the candidate should have read, in addition to the usual grammar work, at least four books of Xenophon's Anabasis, or an equivalent.

Advanced Greek. *Two units.*

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course of five exercises a week, extending through at least three school years. The two parts of the examination may be taken separately: —

(*a*) The translation at sight of an average passage of Homer; with questions on ordinary forms, constructions, and idioms, and on prosody.

(*b*) The translation into Attic prose of a passage of connected English narrative. The passage set for translation will be based on some portion of the Greek prose works usually read in preparation for college.

Before taking the examination in Advanced Greek the candidate should have completed at least four books of Xenophon's Anabasis, or their equivalent in Attic prose, and six books of Homer's Iliad, or their equivalent in the Odyssey. It is recommended that Greek composition accompany all stages of the preparation, and that the pupil be practiced in reading Greek aloud from the beginning of his course.

Elementary History.

One of the following: —

1. Greek and Roman History. (*a*) The history of Greece to the death of Alexander, with due reference to Greek life, literature, and art, as treated in the histories of Botsford, Oman, West, or Myers. (*b*) The history of Rome to the accession of Commodus, with due reference to Roman literature and government. Such texts as those of Morey, Botsford, West, or Allen will indicate the character of the work desired.

While the periods indicated above will be accepted as satisfying the entrance requirements in ancient history, it is strongly recommended that the study of the history of Greece be continued to the conquest of Greece by Rome, and that the history of Rome be pursued to the fall of the Western Empire.

This does not necessarily imply any increase in the time devoted to Greek and Roman history.

2. English and American History. (*a*) The history of England, with due reference to social and political development. The histories of Andrews, Larned, and Montgomery will indicate the character of the work expected. (*b*) The history and government of the United States. Such texts as McLaughlin's History of the American Nation, Johnston's or Channing's History of the United States, and Fiske's Civil Government should be used.

3. American history and civil government. A more extended and detailed study than is represented by 2 *b* above.

It is recommended that all candidates for admission to the courses leading to the degree of A.B. or B.D. should offer Greek and Roman history.

The elementary requirement in history implies one year's work of not less than five periods a week. Equivalents for the subjects named above will be accepted, but candidates desiring to offer substitutes must give notice to the Secretary of the Faculty at least one month previous to the time set for the examination. Work in the text-book should be constantly accompanied by collateral reading. The attention of teachers

is called to the Report of the Committee of Seven, published by the Macmillan Company, New York, under the title, "The Study of History in Schools."

Advanced History. *Two units.*

One of the following: —

1. The history of Greece and Rome, as described above, for those only who have offered English and American history or American history and civil government as primary subjects.

2. The history of England and the United States, as described above, for those only who have offered Greek and Roman history as primary subjects.

3. American history and civil government, for those only who have offered Greek and Roman history as primary subjects.

Each of these subjects requires one year's study of not less than five recitation-periods a week. Equivalents for the subjects outlined above will be accepted, upon due notice, as indicated above under Elementary History.

Elementary Mathematics.

A knowledge of the metric system, and ability to perform accurately the ordinary processes of arithmetic, are presumed. The examination will include: —

(*a*) Algebra, through quadratic equations in one and two unknown quantities, the progressions, ratio and proportion, and the binomial theorem for positive integral exponents; also

(*b*) Plane Geometry, including the usual theorems on straight lines, angles, rectilinear figures, circles, and regular polygons; similar triangles and proportion; construction; simple original exercises in demonstration; numerical problems in mensuration.

Advanced Mathematics.

1. Advanced Algebra, including the elementary treatment of permutations and combinations, the theory of logarithms, undetermined coefficients, the binomial theorem for fractional and negative exponents, determinants, and the elements of the theory of equations. Credit in Advanced Algebra is given only on examination. *One unit.*

2. Solid Geometry, including properties of straight lines and planes, dihedral and polyhedral angles; of projections, of polyhedrons, including prisms, pyramids, and the regular solids; of cylinders, cones, and spheres; of spherical triangles, and the measurement of surfaces and solids. *One unit.*

3. Plane Trigonometry, including the definition and relations of the six trigonometrical functions as ratios, proof of important formulæ, theory of logarithms and use of tables, solution of right and oblique plane triangles. *One unit.*

In Advanced Mathematics the school should insist upon the same amount of work and aim at the same standard of scholarship as the college requires in its courses in these subjects.

Physics.

(*a*) ELEMENTARY. The examination will be upon such elementary text-books as Gage's, or Avery's, with emphasis upon Mechanics and Energy. *One unit.*

(*b*) ADVANCED. In addition to (*a*), the candidate is required to present satisfactory evidence, by both certificate and record book, of having completed a year's course of laboratory experiments in physics of such grade as in Hall and Bergen's Text Book of Physics. *One unit.*

Chemistry.

(*a*) ELEMENTARY. Preparation for this requirement presupposes a course in general inorganic chemistry (the non-metals) of not less than four periods a week for a year, in amount equal to that in An Introduction to the Study of Chemistry, by Ira Remsen, with experimental work in the non-metals equal in amount to that in Remsen's or Williams's Laboratory Manual. The experiments are to be performed by the students. It is well to present a certified laboratory note-book. *One unit.*

(*b*) ADVANCED. The advanced requirement includes general inorganic chemistry, as in the elementary requirement, and in addition a course of not less than four periods a week for one year, devoted to the study of the metals. The amount must be equal to that in Remsen's text-book mentioned above, and involve experiments with the metals and their compounds, cov-

ering the ground of and equal in number to those in one of the above-mentioned laboratory manuals. *One unit.*

Natural History. *One or two units*

In Natural History the examiners give more weight to the character of the work than to the time spent; but at least five periods a week for half a year must have been given to each subject presented, and of this at least half should be devoted to laboratory work. Certified copies of laboratory note-books must be presented. In Botany and Zoology the work should be on structural lines, and detailed study should have been made of at least ten types. Little credit will be allowed for time spent in the analysis of plants or the identification of birds or insects. The following are the subjects which may be presented for admission, the names of the authors of text-books in connection with each being an index of the character of the work expected. Each subject is awarded one or two units, but not more than two subjects will be accepted.

1. Botany: Atkinson, Bergen, Bessey, Campbell, Coulter, Setchell, Spaulding.
2. Zoology: Boyer, Colton, Kellogg, Kingsley, Needham.
3. Physiology: Huxley, Martin, Peabody.
4. Geology: Dana, Norton, Brigham, Tarr.

Freehand Drawing. *One unit.*

The examiner requires evidence of ability to make an accurate outline or shaded drawing from a group of geometric models, or a shaded drawing from a simple cast. Such a knowledge of the fundamental principles of perspective is required as shall enable the student to draw a simple geometric figure without the use of a model. Certified drawings must be submitted, and the student may be examined on all points in doubt.

Mechanical Drawing. *One unit.*

Accuracy and neatness in drawing is of the first importance, and no amount of work will make amends for neglect in these respects. The student must be familiar with the use of ordinary instruments, and able to solve geometrical problems with accuracy and rapidity. He must also be practiced in the drawing of

the ellipse, the parabola, and the hyperbola, and have an elementary knowledge of projection. The suggested course is included in the first seventy-five pages of Anthony's Elements of Mechanical Drawing. Certified work of the student must be presented, and he may be examined on all points in doubt.

Advanced standing is given in this subject only on examination.

Shopwork. *One unit.*

The applicant should present satisfactory evidence of familiarity with tools and materials used in the ordinary processes of wood-work, or metal-work.

Wood-work includes carpentry, turning, and pattern work. It requires a thorough knowledge of the sharpening, adjustment, and use of the tools, and ability to work from drawings.

Metal-work includes chipping, filing, and the use of machine tools, at the bench and the lathe. Whenever possible, the applicant should present models made by himself and certified by his instructor.

Advanced standing is given in this subject only on examination.

Elementary Economics. *One unit.*

Preparation for Economics presupposes that the candidate has studied the subject in a systematic course of at least three periods a week for one full year. Credit in Economics will be given only on examination. The examination will be based upon such text-books as Bullock's or Seager's Introduction to the Study of Economics. A knowledge of civics and, particularly, modern industrial history is of great value in supplementing the study of economic theory.

Music.

Entrance credit in Music is given only on examination.

(*a*) MUSICAL APPRECIATION. *One unit.*

The examination will be adapted to the attainment of those who have had one year's systematic training, with three lessons a week, or its equivalent. The candidate is expected to have (1) a general knowledge of the principal musical forms—song,

classic dance, fugue, sonata (all movements), symphony—and of their historical development; (2) a general knowledge of the lives and environment of at least ten composers, including Bach, Mozart, Beethoven, Schubert, Chopin, and five of the following: Purcell, Handel, Gluck, Haydn, Cherubini, Weber, Rossini, Glinka, Mendelssohn, Schumann, Wagner, Verdi; (3) familiarity with certain designated works, the list of which may be had on application to the Secretary of Tufts College. In the examination on these works, the candidate will be expected to identify characteristic portions of the works set, when played by the examiner; and to give intelligent information concerning the form and character of the works themselves. The test will not require ability to perform, nor to read from printed music.

(*b*) HARMONY. *One or two units.*

The examination will be adapted to the proficiency of those who have had one year's systematic training, with three lessons a week, or its equivalent. The candidate should have acquired (1) the ability to harmonize, in four vocal parts, simple melodies of not fewer than eight measures, in soprano or in bass: these melodies will require a knowledge of triads and inversions, of diatonic seventh chords and inversions, in the major and minor modes; and of modulation, transient or complete, to nearly-related keys; (2) analytical knowledge of ninth chords, all non-harmonic tones, and altered chords (including augmented chords). [Students are encouraged to apply this knowledge in their harmonization.]

It is urgently recommended that systematic ear-training (as to interval, melody, and chord) be a part of the preparation for this examination. Simple exercises in harmonization at the pianoforte are recommended. The student will be expected to have a full knowledge of the rudiments of music, scales, intervals, and staff-notation, including the terms and expression-marks in common use.

(*c*) COUNTERPOINT. *One unit.*

The examination will be adapted to the proficiency of those

who, having completed a year's study of Harmony, have also studied Counterpoint in a systematic course of three lessons a week through one school year. The candidate should have had training in pianoforte-playing sufficient to enable him to render the Two-Part Inventions of Bach. The year's work should consist principally of written exercises on given or invented themes, as follows: —

Chorals and melodies harmonized, with use of passing and ornamental tones; the several orders of Counterpoint in two, three, and four voices, with and without *cantus firmus;* elementary practice in Double Counterpoint; Imitative Counterpoint in the style of the simpler Two-Part and Three-Part Inventions and Choral Preludes of Bach; general analytical study of contrapuntal compositions of larger scope, including detailed analysis (both as a harmonic scheme and as to contrapuntal treatment) of not less than ten pages from at least four fugues of Bach's Well-Tempered Clavichord.

There should be some practice with the C clef, in reading and in writing. Familiarity with the alto and tenor clefs is especially desirable.

(*d*) PIANOFORTE, OR VOICE, OR VIOLIN. *One unit.*

The examination in each of these subjects will consist of a test in theory, and a test in performance. The former will be conducted in writing, and will be adapted to the proficiency of those who have had one year's systematic training, with one lesson a week, or its equivalent. The candidate should have acquired:

A knowledge of the rudiments of music, scales, intervals, and staff-notation, including the terms and expression-marks in common use; the ability to analyze the harmony and form of hymn-tunes and simplest pieces for the pianoforte, involving triads and the dominant seventh chord and their inversions, passing tones, and modulation to nearly-related keys; the ability to harmonize, on paper, in four vocal parts, melodic fragments involving the use of triads and the dominant seventh chord and their inversions in major keys.

As a basis of the test in performance, the candidate is to furnish a detailed statement from his teacher, showing the course of instrumental or vocal study pursued.

GENERAL INFORMATION RELATING TO ADMISSION

The regular examination for admission begins on the day after Commencement, and continues through the two following days. A second examination is held on the Saturday, Monday, and Tuesday preceding the beginning of the College year.

The examination begins at 9 o'clock A.M. on each of these days. See the calendar, pages 7, 8. A fee of five dollars is charged all candidates for examination. Those who subsequently enter the Department of Arts and Sciences will not be required to pay the registration fee.

At the regular examination in June those who will be candidates for admission to the Freshman class one or two years later may present themselves for examination in the subjects of the Primary Group, and in others upon which their teachers may certify that they are adequately prepared. They will receive certificates of the subjects in which they pass, such subjects to be credited to them when they appear for their final examinations.

For admission to advanced standing an examination must be well sustained both in the preparatory studies and in the studies in which the candidate desires credit for advanced standing.

All students entering on examination are required to register at the office of the Registrar before taking their examinations. All students are required to register on the opening day of the College year.

The certificates of the College Entrance Examination Board will be accepted from candidates unable to appear at the College for examination.

Admission by Certificate. — Certificates covering the preparatory work of candidates for admission from New England schools are received in lieu of examination only from schools that have been approved by the New England College En-

trance Certificate Board. The institutions represented upon the board are Amherst College, Boston University, Bowdoin College, Brown University, Dartmouth College, Mount Holyoke College, Smith College, Tufts College, the University of Maine, the University of Vermont, Wellesley College, Wesleyan University, and Williams College. Application for recognition upon the list of approved schools, when made to the Faculty of Tufts College, will be referred to the *Secretary of the Board, Professor N. F. Davis, 159 Brown St., Providence, R. I.*

Credit in the following subjects, which are outside the ordinary preparatory school curriculum, is allowed only upon examination: Advanced English, Advanced Algebra, Economics, and Music.

Applications must be received before April first, in order that a school may be placed on the approved list for the next academic year.

Certificates from schools outside of New England are examined by a committee of the faculty of Tufts College. Applications for the approval of such certificates should be made to the Secretary of Tufts College.

Each certificate must cover a preparatory course of not less than four full years of school work, which must have been in approved schools, though not necessarily continuously in one school. It must contain complete answers to such questions as may be proposed by the several examiners.

Certificates should be in the hands of the Registrar of the College at least one month before the opening of the College year.

Blank forms for certificates will be sent upon request made to the *Registrar of the College, Tufts College, Massachusetts.*

SCHOOL OF LIBERAL ARTS

Faculty of the School of Liberal Arts

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT

FRANK G. WREN, A.M., DEAN
Walker Professor of Mathematics

PHILIP M. HAYDEN, A.B., SECRETARY
Instructor in French

CHARLES H. LEONARD, A.M., D.D., LL.D.
Goddard Professor of Homiletics and Pastoral Theology

EDWIN C. BOLLES, A.M., PH.D., D.D., LL.D.
Dickson Professor of English and American History

GEORGE M. HARMON, A.M., S.T.D.
Professor of Biblical Theology

CHARLES E. FAY, A.M., LITT.D.
Wade Professor of Modern Languages

WILLIAM G. TOUSEY, A.M., S.T.D.
Ryder Professor of Ethics and the Philosophy of Theism

GEORGE T. KNIGHT, A.M., D.D.
Packard Professor of Christian Theology

WARREN S. WOODBRIDGE, A.M., S.T.D.
Woodbridge Professor of Applied Christianity

J. STERLING KINGSLEY, Sc.D.
Professor of Biology

ALFRED C. LANE. A.M., PH.D.
Pearson Professor of Geology and Mineralogy

HERBERT E. CUSHMAN, A.M., PH.D.
Professor of Philosophy

LEO R. LEWIS, A.M.
Professor of the History and Theory of Music

DAVID L. MAULSBY, A.M.
Professor of English Literature and Oratory

FRANK W. DURKEE, A.M.
Professor of Inorganic Chemistry

WILLIAM K. DENISON, A.M.
Professor of the Latin Language and Literature

HARRY G. CHASE, B.S.
Professor of Physics

LAWRENCE B. EVANS, PH.D.
Professor of History

HENRY C. METCALF, PH.D.
Jackson Professor of Political Science

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

THOMAS WHITTEMORE, A.B.
Professor of English, and Instructor in the History of Art

WILLIAM R. RANSOM, A.M.
Professor of Mathematics

FRED D. LAMBERT, A.M., PH.D.
Assistant Professor of Biology

WILLIAM H. REED, JR., A.M.
Instructor in German and Spanish

LIZZIE MAUD CARVILL, A.B., M.D.
Instructor in Physical Training for Women

PHILIP H. COBB, PH.D.
Assistant Professor of Physical and Organic Chemistry

RAY W. CLOUGH, A.M.
Instructor in Chemistry

CLINTON J. MASSECK, A.B.
Instructor in English

OSCAR MARTIN
Instructor in Physical Training

COMMITTEE ON PROMOTIONS

Dean Wren, *Chairman;* Professors Woodbridge, Durkee, Lewis, and Denison.

COMMITTEE ON CURRICULUM

Dean Wren, *Chairman;* Professors Maulsby, Fay, Denison, and Durkee.

Requirements for Degrees*

Students may enter upon their work in the courses of liberal arts as candidates for the degree of Bachelor of Arts, or Bachelor of Divinity. In any case the ground of promotion and of graduation is the intellectual attainment of the individual student, not a fixed requirement of a certain number of years of study.

The plan of study offered to the student is at once liberal, controlled, and elastic. It combines the essentials of the general culture which is the prime object of the undergraduate college course with an opportunity for the development of the individual on the lines to which he is especially adapted. Students determine the general direction of their work by the choice of major department. They are thereby brought into personal advisory relations with their respective major instructors, under whose guidance they arrange their programs with reference to their individual needs and aims. All work actually accomplished by the student in regular standing counts toward the attainment of the degree. The period within which the degree may be attained depends upon the industry and ability of the individual student.

SYNOPSIS OF THE REQUIREMENTS FOR A.B.†

(1) The requirement for the degree of Bachelor of Arts is the satisfactory completion of subjects aggregating one hundred and twenty-two term hours, including physical training.

(2) Students are required to attain for graduation a grade of at least C in seventy-two term hours.‡

* For the requirements for B.S. see "Courses in Science" and the announcement of the Engineering School; for B.D. see the announcement of the Crane Theological School.

† Each department offers a series of subjects for study. The unit indicating the requirements is the *term hour*, which represents a subject pursued one hour a week for one half-year. Thus a subject calling for three hours a week for one term represents a requirement of three term hours; if it calls for three hours a week for one year, or two terms, the requirement in that subject is six term hours.

‡ For the meaning of grade C, see "Grades of Scholarship" under "General Information."

(3) The program of prescribed studies is as follows: —

	Term Hours
LANGUAGES (Latin, Greek, French, German: each student to take *three*)	18
ENGLISH	6
MATHEMATICS	6
PHYSICAL SCIENCE (Physics, Chemistry, Biology: each student to take *one, or two*)	12
MENTAL AND MORAL SCIENCE (of the three departments, Philosophy, Political Science, and History and Public Law, each student must take work in *at least two*)	12
PHYSICAL TRAINING	2
A total of	56

The requirements are by groups, not by special subjects, and in each group except English and Physical Training some choice is allowed the student.

(4) A normal Freshman program includes English, Mathematics, an ancient language, a second foreign language, and a physical science, together with Physical Training. All Freshman programs are subject to the approval of the Committee on Promotions.

(5) At the end of the first year the student is required to choose a major department, in which he must complete, before graduation, work amounting to eighteen term hours. He may offer work already done in that subject in some one of the prescribed groups as a part of the eighteen hours which he is required to give to his major department, but no subject indicated in the catalogue as elementary can be counted in such work.

(6) The student shall further complete eighteen term hours in subjects designated as collateral with his major subject; that is, subjects tending to strengthen and assist his work in his major.

(7) The remaining term hours of the required aggregate are to be made up by the election of the student from the various subjects offered, limited only by special restrictions applied to certain subjects. The number of the remaining term hours is thirty, unless, as occasionally happens, the same work counts

both as prescribed and as major work. In such case, the number of elective hours is proportionately increased.

(8) Upon the satisfactory completion of the aggregate requirement, the student is entitled to receive the Bachelor's degree, but no student shall be granted a degree in less than four years of residence, unless he shall have obtained grade B as an average for his entire work.

Summary

	TERM HOURS
Prescribed work	56
Major department	18
Collateral subjects	18
Elective *	30
	122

* An acceptable Commencement part counts as an elective in the second half of the Senior year. See also the second half of paragraph (7), above.

Departments of Instruction

MAJOR DEPARTMENTS

Any of the following may be chosen as major departments:

ENGLISH	POLITICAL SCIENCE
GERMAN	MATHEMATICS
FRENCH	PHYSICS
LATIN	CHEMISTRY
GREEK	BIOLOGY
PHILOSOPHY	ENGINEERING
HISTORY AND PUBLIC LAW	

In the subjoined statement of the subjects offered in the different departments, the name of the major instructor is that given at the head of each department that offers major work. In other cases the name is given of the instructor in general charge of the department. When two or more names appear, major students will be guided by the usage of the department. Names of instructors in charge of each subject are appended to the brief statement of the subject itself.

Subjects that continue through only one half-year are indicated by letters in parenthesis following the proposed hour: thus (F) means "first half-year," (S) means "second half-year." Subjects not so indicated extend through both terms. The credit in term hours for each half-year is equivalent to the number of program hours a week assigned to the subject, unless otherwise indicated.

Subjects enclosed in brackets will not be given during the current year. In many cases alternates are indicated, which fill their places in the program for this year. If less than four qualified students apply for an announced course, the instructor is permitted to cancel the announcement unless the course is

a part of the required work for any student applying. Subjects marked with an asterisk (*) will not be counted for honors. Subjects marked with a double asterisk (**) will be counted for honors only when special conditions are complied with.

A tabular view of the program of hours accompanies the subjoined statement of the several departments. No two subjects assigned to the same hour can be taken simultaneously by any student.

ENGLISH

PROFESSOR MAULSBY AND PROFESSOR WHITTEMORE

The work of the department of English includes composition and the study of literature. Subjects 1, 2, 4, 8, 23, and 27 give practice in one or another form of composition as the result immediately held in view, but written English is required also in many of the classes aiming primarily at literary study. See also subject 7. Subjects 1 and 2 are prescribed for all students in the School of Liberal Arts. English 8 is required of those who fail to do satisfactory work in English 1 or English 2. Major students in English are required to take English 11, preferably in the earlier years of their course. Other subjects offer opportunity for practice in advanced composition, and for the study of eminent authors, of leading critical essays, of the development of English drama and fiction. English 10, 11, 12, or 15 may be counted for honors, provided only one of these subjects is so counted.

SUBJECTS

*1. The Four Forms of Discourse. Lectures, text-book, themes, conferences. *Tu., Th., Sat., 10.45.* (F)
PROFESSOR MAULSBY AND MR. MASSECK

*2. A Study of Expression. Lectures, themes, conferences. *Tu. Th., Sat., 10.45.* (S) PROFESSOR WHITTEMORE AND MR. MASSECK

[4. Advanced Composition. Lectures, themes, conferences. *Hours to be arranged. Counting as three hours.* (S) PROFESSOR MAULSBY]
English 4 may be expected in 1910-11.

*8. The Theory and Practice of Composition. Themes, conferences. *Three hours, to be arranged.* (S) PROFESSOR MAULSBY

7. English Versification. Study of the nature and the forms of poetry Composition. *Tu., Th., Sat., 10.45.* (S) PROFESSOR MAULSBY

**10. The English Bible. *Tu., Th., Sat., 11.45.*
PROFESSOR WHITTEMORE

[**11. General View of English Literature. The study of representative masterpieces. Lectures, text-books, required reading, papers. *Mon., Wed., Fri., 11.45.* PROFESSOR MAULSBY]

English 11 may be expected in 1910-11.

**12. American Literature. Lectures, required reading, text-book, essays. *Mon., Wed., Fri., 11.45.* PROFESSOR MAULSBY

[14. Poets of the Victorian Era, chiefly Tennyson and Browning. Lectures, reading, brief critical essays. *Tu., Th., Sat., 8.45.* (S)
PROFESSOR WHITTEMORE]

English 14 may be expected in 1910-11.

**15. Prose of the Nineteenth Century. Lectures, reading, brief critical essays. *Mon., Wed., Fri., 11.45.* PROFESSOR WHITTEMORE

[16. Milton and his Time. Lectures, readings, brief critical essays. *Tu., Th., Sat., 10.45.* (F) PROFESSOR WHITTEMORE]

English 16 may be expected in 1910-11.

[17. Shakespeare. Minute study of a few plays, lectures, quizzes. *Mon., Wed., Fri., 8.45.* (F) PROFESSOR MAULSBY]

English 17 may be expected in 1910-11.

38. Shakespeare. Reading of selected plays, lectures, brief critical essays. *Mon., Wed., Fri., 8.45.* (F) PROFESSOR WHITTEMORE

18. Shakespeare. Reading of selected plays, lectures, brief critical essays. *Mon., Wed., Fri., 8.45.* (S) PROFESSOR WHITTEMORE

[19. Chaucer. Study of forms and pronunciation, reading of selections from the Canterbury Tales and the minor poems. *Mon., Wed., Fri. 10.45.* (S) PROFESSOR MAULSBY]

English 19 may be expected in 1910-11.

[21. The Principles of Criticism. Plato, Aristotle, Longinus, Quintilian, Burke, Lessing, Coleridge, Pater. *Three hours, to be arranged.* (S)
PROFESSOR WHITTEMORE]

English 21 may be expected in 1910-11.

23. The Short Story. Examples, and composition. *Three hours, to be arranged.* (F) PROFESSOR WHITTEMORE

25. Development of the English Drama. Emphasis will be placed upon the modern drama. *Mon., Wed., Fri., 9.45.*
PROFESSOR MAULSBY

[26. Development of the English Novel, in the eighteenth and nineteenth centuries. *Mon., Wed., Fri., 9.45.* PROFESSOR MAULSBY]

English 26 may be expected in 1911-12.

27. Homiletics. The Idea and Structure of the Sermon. Homiletic analysis of texts taken from the Bible; study of the sermons of eminent preachers with respect to literary form, expression, and range of illustration. Helps to sermon preparation from studies in character and literature. *Three hours, to be arranged.* PROFESSOR LEONARD

28. Seminar in Emerson. *Hours and credit to be arranged with the instructor.* PROFESSOR MAULSBY

English 28 is open only to advanced students of English.

ORATORY

PROFESSOR MAULSBY AND MR. MASSECK

It is intended that the study of oratory shall benefit the student, whether or not he looks to public speaking as a part of his profession. Oratory 1 aims at securing intelligent, natural, and forcible speech. The principles that underlie good public speaking are pointed out, and applied in individual practice. Oratory 2 is not organically connected with Oratory 1, but offers practice in argumentation and debate to Sophomores, Juniors, and Seniors. Each subject counts as three term hours.

SUBJECTS

1. The Principles of Oratory. Correct breathing and tone production; placing the voice; enunciation and pronunciation; attitude and gesture. Conferences. *Three hours, to be arranged.* (S)

PROFESSOR MAULSBY AND MR. MASSECK

2. Argumentation and Debate. Text-book, papers, impromptu and prepared debate. Individual criticism. *Three hours, to be arranged.* (F)

PROFESSOR MAULSBY

GERMAN

PROFESSOR FAY

The aim of the department is twofold, according as the student has entered with the elementary or the advanced requirement. In the former case it is to lead him in the briefest possible time to such a mastery of the language as will enable him to use it as a source of information and medium of literary culture; where this preliminary work has already been done, to afford this literary culture itself, together with such historical and linguistic knowledge as may properly accompany advanced work in a literary department. Hence, in the elementary subjects, facility and accuracy of translation are sought by means of

copious reading and careful grammatical drill; in the intermediate year the classic masterpieces are read for their own sake, together with such historical material as will throw light upon the epoch in which they were written or with which they deal; in the advanced work the systematic study of the history of the literature is undertaken, and opportunity is afforded for acquiring a knowledge of the earlier literary forms.

Six consecutive subjects are offered. While it is not impossible to take them all within the four college years, the scheme is based upon the supposition that the earlier subjects will have been taken in the preparatory school.

SUBJECTS

*1. Elementary German. The essentials of grammar; a German reader; reading of modern prose; dictation and composition. *Mon.*, *Wed.*, *Fri.*, *9.45*. MR. REED

German 1 is the equivalent of the entrance requirement in Elementary German, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Review of grammatical principles, especially with reference to syntax. Reading of works by modern authors, lyrics and ballads. Dictation and composition. *Mon.*, *Wed.*, *Fri.*, *8.45*. MR. REED

German 2, when taken by entering students, presupposes two years' study of the language in the preparatory school. It is possible for a student who has done with distinction the work of German 1, and who shall do a prescribed amount of outside reading, to omit this subject and enter German 3.

**3. First half-year: the rapid reading of modern prose in contemporary authors. Second half-year: introduction to the classic authors: Lessing, Minna von Barnhelm; Schiller, Die Jungfrau von Orleans; Goethe, Hermann und Dorothea. *Tu.*, *Th.*, *Sat.*, *8.45*. PROFESSOR FAY

For entering students German 3 presupposes three years of preparatory study. Either half-year may be counted as a half-subject.

**3B. German Composition, written and oral. Translation from English into German; paraphrase of a German text. *Tu.*, *Th.*, *Sat.*, *9.45*. MR. REED

German 3B is offered to students who are taking or have previously taken German 3 or its equivalent.

4. Schiller and Goethe. Maria Stuart, Wallenstein, and Ballads of Schiller; Egmont, and selections from prose works of Goethe. Collateral reading. Dictation. *Tu.*, *Th.*, *Sat.*, *11.45*. MR. REED

German 4 is open to entering students who have had four years of preparatory study, or who have passed with distinction the entrance examination in Advanced German. Juniors and Seniors whose major department is German may be permitted to take 4 and 5 in the same year.

5. Advanced reading in Lessing and Goethe. Nathan der Weise, Emilia Galotti, Laokoön; Tasso, Iphigenie, Faust, Parts I and II, with collateral reading. *Mon., Wed., Fri., 10.45.* PROFESSOR FAY

6. History of German Literature, with illustrative works for leading epochs. Middle High German: Bachmann, Mittelhochdeutsches Lesebuch. *Mon., Wed., Fri., 8.45.* PROFESSOR FAY

FRENCH

PROFESSOR FAY AND PROFESSOR LEWIS

The plan and scope of the department are, in general, the same as those of the department of German, to the statement of which the student is referred. Six consecutive subjects are offered.

SUBJECTS

*1. Elementary French. The essentials of grammar, with composition; Grandgent's Grammar; a French reader; reading of short works of modern authors in prose and verse. *Mon., Wed., Fri., 9.45.* PROFESSOR LEWIS

French 1 is the equivalent of the entrance requirement in Elementary French, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Review of grammatical principles, especially with reference to syntax; exercise in composition; vocabulary practice; reading of modern fiction and drama, such as Merimée's Colomba and Sandeau's Mademoiselle de la Seiglière. *Mon., Wed., Fri., 8.45.* PROFESSOR LEWIS

French 2, when taken by entering students, presupposes two years' study of the language.

**3. Reading of modern authors (Thiers, Taine, de Vigny); introduction to seventeenth-century classics (Corneille, Racine, Molière). Review of grammatical principles, with advanced vocabulary practice. *Tu., Th., Sat., 8.45.* PROFESSOR LEWIS

For entering students French 3 presupposes three years of preparatory study. Either half-year may count as a half-subject.

**3B. French Composition. Chardenal's Advanced Exercises; Plœtz, Nouvelle Grammaire Française and Uebungen zur Erlernung der französischen Syntax; brief essays and dictation. *Tu., Th., Sat., 9.45.*
PROFESSOR FAY

French 3B is offered to students who have satisfactorily completed French 2 or its equivalent. It is essential that at least one course in German should have been taken.

4. Literature and Manners of the Seventeenth Century. Crane's Société française au XVII^e Siècle; Molière, Le Misanthrope, Les Précieuses Ridicules, Les Femmes Savantes; Boileau, Les Héros de Roman; Madame de Sévigné; La Fontaine, Fables (selected); Warren's French Prose of the XVIIth Century; collateral reading touching the political history of the period, and selections from modern critics. *Mon., Wed., Fri., 2.00.*

PROFESSOR FAY

French 4 is open to entering students who have had four years of preparatory study of the language, or who have passed with distinction the entrance examination in Advanced French. Juniors and Seniors whose major department is French may be permitted to take 4 and 5 in the same year.

5. Literature of the Eighteenth and Nineteenth Centuries. The drama, poetry, the novel, the philosophical essay, and criticism. *Mon., Wed., Fri., 3.00.* PROFESSOR LEWIS

Either half-year may count as a half-subject.

[6. A systematic study of French literature from the earliest times to the middle of the nineteenth century. The manuals of Petit de Julleville and Brunetière will be read, together with illustrative texts for the several epochs, from which some period will be chosen for more detailed study. *Mon., Wed., Fri., 9.45.* PROFESSOR FAY]

ITALIAN

PROFESSOR FAY

The work offered in Italian is open to those only who have had two years of college study in French, or its equivalent. With such previous training, the student is able to acquire with rapidity a reading knowledge of the language, and thus to become acquainted within the year with characteristics of contemporary and classic literature. This subject is presented in alternate years.

SUBJECT

[1. Grandgent's Grammar and Composition; Bowen's Reader; Maffei, Merope; Dante, Divina Commedia (Scartazzini's edition). *Tu., Th., Sat., 10.45.* PROFESSOR FAY]

LATIN

PROFESSOR DENISON

The aim of the department of Latin is to lead students to a thorough appreciation of a language and people that have had

profound influence on modern life and literature. A wide range of reading is offered, to give opportunity for acquaintance with every important division of Latin literature. Considerable time is devoted to reading at sight. The attention of students is directed constantly to the history, archæology, art, public and private life, and religion of the Roman people, as well as to the formation and structure of their language and its relation to other languages. Due emphasis is laid on the connection between ancient and modern life and thought. The various reading courses are supplemented with lectures on appropriate topics, and are illustrated from time to time with the stereopticon. Latin 1, 2, either 3 or 4, and two composition courses are offered every year, and a number of other subjects, such as Latin 8, 9, and 10, are given, with due announcement, at regular but longer intervals. Courses 3, 4, and all designated by numbers above 7, as well as all subjects in Classical Archæology, are suitable for graduate students. The authors and works named below may be changed, but are fairly indicative of the character of the work in the several subjects.

SUBJECTS

*1. Cicero, De Senectute, or selected letters; Vergil, Eclogues; selections from Latin poets; Livy, two books; reading at sight; lectures on suitable topics. *Division* (*a*), *Mon.*, *Wed.*, *Fri.*, *11.45*; *Division* (*b*), *Tu.*, *Th.*, *Sat.*, *11.45*. PROFESSOR DENISON

Latin 1 is introductory to all later subjects. Latin 5 is designed primarily for students of Latin 1 who wish for work in composition.

2. Pliny, selected letters; Petronius, Cena Trimalchionis; Horace, Odes and Epodes; Tacitus, Germania or Agricola; reading at sight; lectures on suitable topics. The authors, with the exception of Horace, belong to the Silver Age. The student is thus carried into a new epoch of Latin literature. *Tu.*, *Th.*, *Sat.*, *9.45*. PROFESSOR DENISON

Latin 2 is open to students who have completed Latin 1.

[3. Juvenal, principal Satires; Martial, selected Epigrams; Suetonius, selections; Catullus; reading at sight. Juvenal and Martial will be studied with special reference to the information they afford concerning the history and life of the early empire. *Three hours, to be arranged.*

PROFESSOR DENISON]

4. Horace, Satires and Epistles; Plautus, one or two plays; Cicero, selected letters; reading at sight. *Three hours, to be arranged.*
PROFESSOR DENISON

Subjects 3 and 4 will be given in alternate years, and are designed for those who have completed Latin 2, or its equivalent. They may, by special arrangement with the instructor, be taken as half-subjects in either half-year.

*5. Latin Composition; translation of English narrative, based in part on the prose authors read in Latin 1, with which it may be taken most profitably. *Tu., 2.00.* PROFESSOR DENISON

6. Latin Composition. Latin 6 is open only to students who have completed Latin 5. In it particular attention is paid to idiom and style. By reason of the variation of the work from year to year, the subject may be taken a second time with due credit. *Th., 2.00.* PROFESSOR DENISON

8. Terence, Phormio; Cicero, De Officiis, and Dream of Scipio. *Three hours a week.* (S) PROFESSOR DENISON

[9. The Elegiac Poets, Tibullus, Propertius, and Ovid. *Three hours a week.* (S) PROFESSOR DENISON]

[10. Lucretius, selections; Vergil, Georgics; Seneca, Medea. *Three hours a week.* (S) PROFESSOR DENISON]

Latin 8, 9, and 10 are half-subjects, and are given, one each year, in regular rotation, if elected by a reasonable number of students. They are open to students who have completed Latin 1, but are intended to be supplementary to, not a substitute for, 2, 3, and 4. Those who wish to widen the range of their Latin reading will find these subjects suited to that end.

NOTE: — The attention of Greek and Latin students is called to related subjects listed under Classical Archæology, page 76.

GREEK

PROFESSOR WADE

The aim of the department is to treat the Greek language not merely as a disciplinary instrument, but as a factor in the broadest and most liberal culture. Throughout the course the practice of reading at sight is encouraged, and especial effort is made to develop such facility that the student may resort with pleasure to the masterpieces of the Greek language, and find in them the delights and inspiration of a noble literature.

To this end also considerable attention is paid to the style

and literary characteristics of the authors read. The relations of Greek to the Latin, German, and English languages are discussed, and the course is shaped to develop, discipline, and enrich the linguistic resources of the student. Reading without translation is encouraged from the beginning. Incidentally, studies are made of the customs and daily life of the people. Discussion relative to the laws, philosophy, and religion of the Greeks is introduced, and some attempt is made to exhibit the indebtedness of modern civilization to Hellenism.

SUBJECTS

*1. Elementary. Goodwin's Grammar; Xenophon, Anabasis; Homer. *Double subject. Daily: Mon., Wed., Fri., 11.45; Tu., Th., Sat., 9.45.*

PROFESSOR WADE

Greek 1 is intended for students entering without Greek and wishing to begin the study of that language. It is assumed that their previous training in linguistic studies will enable them to proceed rapidly and accomplish in one year all the work usually done in preparation for college. This subject may be taken (without credit) as a normal course by advanced students, on consultation with the instructor.

**2. Xenophon, Memorabilia; Homer, Odyssey; Euripides, one play. *Mon., Wed., Fri., 2.00.* PROFESSOR WADE

Greek 2 is for students who have passed Greek 1, or the entrance requirements in Greek.

3. Herodotus, Books VII and VIII; Æschylus, The Persians; Sophocles, Antigone; Euripides, Alcestis. *Tu., Th., Sat., 11.45.*

PROFESSOR WADE

[4. Lyric and Elegiac Poets, to Pindar. Aristophanes: Clouds, Birds, Acharnians, Frogs, with study of social life in Athens in the fifth century B. C. *Tu., Th., Sat., 8.45.* PROFESSOR WADE]

5. Theocritus, Idyls, with study of the Alexandrine age; Lucian; Homer, the Iliad, or the Odyssey, entire, with lectures on the results of the more recent investigations of the Homeric question. *Tu., Th., Sat., 8.45.* PROFESSOR WADE

Subjects 4 and 5 will be given in alternate years, and are designed for those who have completed Greek 3 or its equivalent. They may, by arrangement with the instructor, be taken as half-subjects in either half-year.

**6. Greek Composition; practice in sight reading. *One hour a week.*

PROFESSOR WADE

Greek 6 may be taken by any one who has had the equivalent of Greek 1.

7. Greek Composition; reading at sight. *One hour a week.*
PROFESSOR WADE

Greek 7 is open only to students who have completed Greek 6.

NOTE:—No student can be recommended as a teacher of Greek who has not taken at least one subject in Greek composition.

8. Plato: several of the shorter dialogues. *Three hours a week.* (F)
PROFESSOR WADE

Greek 8 is open to students who have completed Greek 2.

CLASSICAL ARCHÆOLOGY

Under Classical Archæology are grouped subjects of the Greek and Latin departments which deal, to a large measure in lecture form, with the art, life (both public and private), and religion of the ancient Greeks and Romans. The work will consist of lectures, collateral reading and investigation, and papers. There will be illustration, wherever possible, with photographs, stereopticon, and specimens. The following subjects are intended to supplement the reading of classical authors, which naturally forms the basis of serious study in Classical Archæology. It is intended to give two subjects each year, as follows:—

SUBJECTS

[1. Greek, Roman, and Etruscan Architecture. *Mon., Wed., Fri., 9.45.* (F) PROFESSOR DENISON]

[2. Greek and Roman Sculpture. *Mon., Wed., Fri., 9.45.* (S) PROFESSOR WADE]

Classical Archæology 1 and 2 will be given in 1910–11.

[3. Roman Private Life. *Mon., Wed., Fri., 9.45.* (F) PROFESSOR DENISON]

Classical Archæology 3 will be given in 1911-12.

4. Greek Private Life. *Mon., Wed., Fri., 9.45.* (S) PROFESSOR WADE

In subjects 3 and 4 there will be systematic treatment of such topics as the customs pertaining to birth, education, marriage, death, the house, furniture, dress, meals, amusements.

5. Roman Public Life. *Mon., Wed., Fri., 9.45.* (F)
PROFESSOR DENISON

[6. Greek Public Life. *Mon., Wed., Fri., 9.45.* (S) PROFESSOR WADE]

In subjects 5 and 6 there will be systematic study of such topics as the geography and topography of the ancient world, commerce and navigation, political, legal, and military institutions, measures and money, books, inscriptions, religion and festivals, chronology and calendar.

Classical Archæology 6 will be given in 1911-12.

HEBREW

PROFESSOR WOODBRIDGE

Hebrew is offered as a foundation for the critical study of Old Testament literature, and of a more intimate understanding of Hebrew thought and life.

SUBJECTS

1. The Elements of Grammar; translation of portions of Genesis, of the Book of Ruth, and of other selections. *Tu., Th., Sat., 11.45.*

PROFESSOR WOODBRIDGE

2. Syntax; critical reading from the Historical Books, from the Prophets, and from the Psalms. *Three hours a week.*

PROFESSOR WOODBRIDGE

PHILOSOPHY*

PROFESSOR CUSHMAN, PROFESSOR TOUSEY, AND PROFESSOR KNIGHT

The department offers work in all the traditional branches of philosophy, adapted to the needs of many kinds of students. To the specialist in science it affords a comprehensive view of the sciences from the point of view of metaphysics. To the student seeking general culture it affords the liberalizing study of the history of philosophy. To the student of mathematics it commends logic as a necessary supplement to his work. To the specialist in philosophy it will give work as far as an undergraduate should go. The beginner has open to him the choice of three subjects: logic, psychology, and the history of philosophy. In all cases where there is opportunity it is advised that the student begin with the history of philosophy. To follow this natural course makes of philosophy an inductive science. The other subjects may then follow at the student's option, or as his specific needs seem to demand. Students choosing philosophy as their major department will be expected to take at least three term hours each in the history of philosophy, logic, and psychology, and to make up three years of continuous work. The Philosophical Club holds meetings during the year. It gives opportunity to the students of discussing philosophical

* The three departments of Philosophy, History and Public Law, and Political Science constitute the group of Mental and Moral Science, in at least two of which twelve term-hours of work are required for the degree of A.B. See page 30.

subjects collateral with the regular work, and often invites eminent persons to address it on special topics.

INTRODUCTORY SUBJECTS

☞Before pursuing Advanced Subjects in philosophy, students must have passed satisfactorily in one of these Introductory Subjects.

1. History of Ancient Philosophy: the religious period of ancient thought, the pre-Socratic Greeks, the Greek Enlightenment, Plato and Aristotle; the Hellenic-Roman thought, including Stoicism, Epicureanism, neo-Platonism, and early Christianity. Lectures, and text-book: Cushman's History of Ancient Philosophy. *Tu., Th., Sat., 9.45.* (F)

PROFESSOR CUSHMAN

2. History of Modern Philosophy: the beginnings of modern thought in the middle ages, the Renaissance (1500-1688), the modern Enlightenment (1689-1781), German philosophy from Kant to Hegel (1781-1820), modern Evolution theories. Lectures and text-book; Cushman's History of Modern Philosophy. *Tu., Th., Sat., 9.45.* (S) PROFESSOR CUSHMAN

3. Logic. Scope of the science; psychological data; concepts and propositions; first principles of thought; inference, deductive and inductive; elementary study of fallacies. *Tu., Th., Sat., 10.45.* (F) PROFESSOR TOUSEY

55. Psychology. Lectures, and illustrative experiments. The phenomena of consciousness are studied with reference to the physiology of the nervous system, including the brain, eye, ear, skin, nose, and mouth. The elements of consciousness, social psychology. Laboratory demonstrations. *Three hours for the year, to be arranged.* PROFESSOR CUSHMAN

ADVANCED SUBJECTS

4. Logic. Special discussion of the more important themes of Philosophy 3; particular consideration of scientific method; recent developments of the science; fallacious tendencies of mind; advanced treatment of fallacies. *Tu., Th., Sat., 10.45.* (S) PROFESSOR TOUSEY

Philosophy 4 is open only to those who have received credit in Philosophy 3.

[17. Logic. Studies in argumentative literature, with the aim to bring logical theory into relation with the practical requirements of research, advocacy, and criticism; and to illustrate the principles governing the effective presentation of arguments. Use will be made of selected examples of reasoned discourse, supplemented by discussions, and constructive work by the student. *Three hours, to be arranged.* (S) PROFESSOR TOUSEY]

Philosophy 17 is open only to those who have received credit in Philosophy 3.

6. Ethics, Theory of. The moral nature; springs of conduct; moral judgments; theories of the moral standard, particularly sentimentalism, hedonism, rigorism, eudæmonism; moral volition, with critical examina-

tion of the doctrines of free will and determinism; the moral ideal. Text-books, lectures, assigned reading, themes. *Mon., Wed., Fri., 10.45.* (F)

PROFESSOR TOUSEY

7. Ethics, Applied. Bearing of moral theory on the problems of (*a*) the individual life, (*b*) the social life. Special consideration of duties, rights, temperance, charities, moral pathology, penology, ethics of belief. Text-books, lectures, prescribed reading, and theses. *Mon., Wed., Fri., 10.45.* (S)

PROFESSOR TOUSEY

8. Ethics, Historical and Critical. History of ethical speculation; development of moral customs and ideals. Text-books, lectures, prescribed studies in the classics of ethical literature, and theses. *Three hours, to be arranged.* (F)

PROFESSOR TOUSEY

9. Metaphysics: the Theory of Reality, including a review and criticism of the common theories of life, such as materialism, realism, theism, mysticism, idealism, and the fundamental problems involved. Lectures, theses, text-book.

The problems discussed are those fundamental to science, ethics, æsthetics, and logic, considered from the point of view of metaphysics. Among these are the questions of teleology, consciousness and self-consciousness, personality, immortality, freedom and necessity, causation, nature, evil, beauty. *Three hours, to be arranged.* PROFESSOR CUSHMAN

[11. English Philosophy from Hobbes to Hume. The historical development of the English school of thought until Hume, with a critical and expository reading of the works of Hobbes, Locke, Berkeley, and Hume, together with a survey of contemporaneous and other political theories, such as those of Spinoza, Hooker, Rousseau, and Grotius. *Three hours, to be arranged.* (S)

PROFESSOR CUSHMAN]

[12. The Philosophy of Kant. A careful critical and expository reading of the Critiques of the Pure Reason, the Practical Reason, and the Judgment, in Watson's translation. The historical position of Kant with reference to his predecessors and to his influence upon modern thought. Lectures, prescribed reading. *Three hours, to be arranged.* (S)

PROFESSOR CUSHMAN]

[13. Descartes, Spinoza, and Leibnitz, their historical development and doctrines, with a critical and expository reading of their works. Lectures and prescribed reading. *Three hours, to be arranged.* (S)

PROFESSOR CUSHMAN]

Philosophy 13 will be given in 1910-11.

14. Plato: reading of the Dialogues, Jowett's translation. *Three hours, to be arranged.* PROFESSOR CUSHMAN

15. The Philosophy of Theism. The final problem; limits of the intelligence; final cause in nature; evidences of a moral order; theistic and anti-theistic argumentation; intuitivism. *Mon., Wed., Fri., 11.45.*

PROFESSOR TOUSEY

16. The Philosophy of Religion, historical, critical, and constructive. Topical reports by the class, and lectures. *Tu., Th., Sat., 11.45.*
PROFESSOR KNIGHT

18. Psycho-Pathology. The mental and moral origin of functional nervous disorders, and their treatment by methods of suggestion. *Tu., Th., 3.00; Wed., 12.00.* (F) PROFESSOR PRINCE

Philosophy 18 should accompany or succeed Philosophy 5. The Tuesday and Thursday lectures will be given at the Medical School, Huntington Avenue, Boston. The Wednesday exercise will be a clinic at the Boston City Hospital.

EDUCATION

The courses in Education are of value for those pursuing general culture as well as for those intending to become teachers. They are arranged to meet the growing requirements of the best city school boards. Students intending to teach should take in connection with the subject given below the course in General Psychology (Philosophy 5.)

SUBJECTS

11. First term: The History of Education. A general review of Educational movements in Europe since the Greeks, with some reference to Oriental systems. Lectures, Munroe's History of Education, biographies. Second term: Educational Theory. The discussion of the psychological principles involved in education. The school as a factor in society. Lectures and text-book; educational reports; discussions. Supplementary lectures on methods by teachers from secondary schools. *Tu., Th., Sat., 11.45.* PROFESSOR CUSHMAN

HISTORY AND PUBLIC LAW*

PROFESSOR EVANS AND PROFESSOR BOLLES

The department aims to develop the idea of unity in the history of mankind, and to make the study of all history of practical value through its relation to present-day problems and conditions. To this end the approach is made through subjects intended to give a thorough scientific knowledge of essential facts, and so arranged as to show these facts in their proper relations. History 1 is the introductory subject by which the student is prepared for more detailed work. History 2 and 22

* See note, page 77.

are devoted to the history of England, History 3 and 33 to the history of the United States. The subjects numbered from 4 to 7 offer to properly qualified students opportunity to make a more detailed study of limited periods. These subjects are arranged in two series, which alternate with each other from year to year, and thus cover a considerable range. History 15 is devoted to research.

Students expecting to make History their principal study are urged to devote considerable time in their first and second years to the study of modern languages. In History 4, 5, 6, and 7 a reading knowledge of French is assumed.

In the division of Public Law and Administration the object is to furnish such general knowledge of political institutions and their working as is needed by every intelligent citizen, and also to assist those who expect to enter the legal profession or the government service. The study of law and government is closely related to the study of history, and hence one year of history is required for admission to the work in Public Law. The work in this group begins with a study of the political institutions of the United States, which is followed by more advanced subjects dealing with the institutions of our own and other countries, as well as by subjects treating international relations, and the history and principles of jurisprudence. A knowledge of French is desirable, and in some cases indispensable.

History

SUBJECTS

1. The General History of Europe since the Fall of Rome. History 1 is an outline course, designed to give a comprehensive view of the various political, religious, industrial, and social factors of the history of Europe, and thus to pave the way for a more detailed study of limited periods. Text-books, lectures, assigned readings, and the preparation of themes. *Mon., Wed., Fri., 10.45.* PROFESSOR EVANS AND MR. AVERILL

History 1 and 2 will not be accepted for an advanced degree. Students desiring to take as many subjects as possible in the department should elect History 1 and 2 in their second year.

2. History of England to 1688. Text-book, lectures, analyses, and themes. *Mon., Wed., Fri., 8.45.* PROFESSOR BOLLES

SUBJECTS

1. Life and literature of the Hebrew people, from the beginnings to the Greek period. *Mon., Wed., Fri., 4.00.* PROFESSOR WOODBRIDGE

2. A study of Jewish life in contact with Hellenistic culture and Roman provincial administration. *Three hours, to be arranged.* (S) PROFESSOR HARMON

3. History of the Beginnings of Christianity. A study of the time of Jesus, of the rise and growth of the apostolic church, and of its literature. *Mon., Wed., Fri., 3.00.* (F) PROFESSOR HARMON

4. Non-Christian Religions. Comparative studies of religion and civilization in ancient Egypt, in Chaldea, and in ancient and modern India, China, Japan, and Turkey. *Tu., Th., Sat., 8.45.* (F) PROFESSOR KNIGHT

5. History of the Church, including the Sects, from the Apostles to the present time. *Tu., Th., Sat., 9.45.* PROFESSOR KNIGHT

[6. Special studies of religion and superstition, ancient and modern. *Three hours, to be arranged.* (S) PROFESSOR KNIGHT]

History of Religions 6 is open only to those who have taken History of Religions 4.

POLITICAL SCIENCE*

PROFESSOR METCALF

In its course of instruction, the chief aim of the department of Political Science is to give a general view of the most important branches of economics, beginning with the elements of the science and passing by degrees to work of the investigative order. In addition to this broad general outline of economics, the courses and the methods of study are arranged with reference to the constantly increasing needs of those who are fitting themselves for various practical careers, such as banking, transportation, or mercantile work; and to those who look forward to social and philanthropic work as a profession. Subject 12 is especially designed as training for those who are planning for a business career, or for social and philanthropic work as a profession. It should be taken in the Senior year, and is open only to students who are especially qualified to do the work. Students who are planning for a business life should begin the study of economics not later than the Sophomore year.

Subject 1 is designed to lay the foundation for the more advanced work, but endeavors at the same time to satisfy the

* See note, page 77.

wants of those who seek simply a general knowledge of economics. It is open to Freshmen. The character of the work in the advanced subjects is outlined in connection with the following statement.

SUBJECTS

*1. Elements of Economics. (a) Exposition of the fundamental principles of the production, distribution, exchange, and consumption of wealth. Economics 1 does not count for honors. (b) The present organization of industry, trades unions, coöperation, profit-sharing, immigration, child labor, woman in industry, factory legislation, workingmen's insurance, socialism. Ely's Outlines of Economics will be used as a guide. *Tu.*, *Th.*, *Sat.*, *10.45*. PROFESSOR METCALF

2. Modern Industrial History of Europe. After a brief survey of the economic conditions in the European countries at the close of the Middle Ages, the chief attention will be given to the Industrial Revolution in England, and to the rise of modern industrial Germany. Lectures and recitations. *Mon.*, *Wed.*, *Fri.*, *9.45*. (F) PROFESSOR METCALF

[22. Economic and Industrial History of the United States. Bogart's Economic History of the United States is used as a guide. *Mon.*, *Wed.*, *Fri.*, *9.45*. (F) PROFESSOR METCALF]

Political Science 22 will be given in 1910-11.

3. Practical Sociology. The nature and scope of social science. Economics 3 is conducted with reference to American conditions, and covers such topics as the status of the population of the United States; the units of social organization; special social problems of city life; questions of the family; wealth and poverty; the temperance question; criminology, penology; social achievement in the United States. Lectures and recitations. *Mon.*, *Wed.*, *Fri.*, *8.45*. (S) PROFESSOR METCALF

[4. Principles of Public Finance. Public expenditures; classification of public revenues; recent reforms in taxation; the development and significance of public debts; financial administration; recent European and American works on finance. The Elements of Public Finance, by Daniels, is used as a guide. Lectures and discussions. *Tu.*, *Th.*, *Sat.*, *8.45*. (F) PROFESSOR METCALF]

Political Science 4 will be given in 1910-11.

5. Money, Credit, and Banking: an historical course, with special reference to the financial experience of the United States. Leading topics are Hamilton's financial system; protection and revenue tariffs; the bank question; the fiscal policy of the Civil War; resumption of specie payments; the national banking system; state and local taxation; silver legislation and the panic of 1893; government loans; present currency prob-

lems. Dewey's Financial History of the United States is used as a guide. *Tu., Th., Sat., 8.45.* (S) PROFESSOR METCALF

6. Modern Industrial Combinations. The economics of corporations, with special reference to the so-called trust problem. Among the topics treated are trust promotion, capitalization, trusts and industrial efficiency, influence of combinations upon prices, profits, wages, rights of investors, international trade, industrial stability, and business honor; the practical results attained through publicity, taxation, and State regulation. Lectures, recitations, and reports. *Tu., Th., Sat., 9.45.* (F)

PROFESSOR METCALF

16. Modern Labor Problems. This subject deals mainly with the social and economic problems arising from the relations of employers and their laborers. The chief topics will be the growth, methods, and aims of modern associations of wage earners; methods of conciliation and arbitration; strike and factory legislation; employers' liability and recent compensation acts; compulsory publicity; provident institutions and friendly societies. Each member of the class will be expected to make a report upon a labor union. Lectures and recitations. *Tu., Th., Sat., 9.45.* (S)

PROFESSOR METCALF

[10. Transportation Problems. The economic, financial, and social problems arising from modern systems of transportation, with special reference to railway transportation in the United States. The chief topics are: brief historic survey of water and railway transportation; railway charters, powers of directors and stockholders, the nature of railway securities; railway traffic; fares, rate making, rebates, pooling and railway consolidations; the American systems of State railway commissions, the Interstate Commerce Commission, the recent extensions of Federal control; the effects of transportation systems upon industrial competition. A part of the time will be devoted to some of the more recent problems of electric railway development. A special report will be required from each student of the subject. Lectures and recitations. *Three hours, to be arranged.* (S) PROFESSOR METCALF]

Political Science 10 will be given in 1910–11.

12. Vocational Training. *Business Organization and Management.* The structure of modern industry; increased complexity and integration of business structure; different systems of business organization; norms of standardization; staff and departmental organization; departments of research and industrial improvement. The standard of business honor; cultural bearing of business enterprise. Can business callings be placed upon a professional basis?

Women and Industry. Women's fitness for industrial life; women's pay; the place of domestic service in industry; occupational opportunities.

Betterment. Industrial hygiene; welfare work as a means of maintain-

ing friendly relations between employer and employed; essential principles of welfare work; examples of successful welfare institutions in the United States and in Europe; the functions of the welfare manager; welfare work as a profession for men and women.

Industrial Education. Unemployment and misemployment; industrial education and industrial efficiency; the State and industrial education; demand for such education; the relation between academic and technical education; types of trade and industrial schools; trade education and trade unions: industrial education as a social force; the education best suited for those entering upon trade and commerce; the demand for teachers of industrial and trade training.

Social Technology. Education for social efficiency; social work, social legislation, social settlements; principles adapted to the work of social organizers. Social and philanthropic work as a profession for men and women. *Three hours, to be arranged.* PROFESSOR METCALF

8. Municipal Problems in Europe and the United States. Growth of modern cities, municipal monopolies, public works, recreation, sanitation; the public control, ownership, and operation of public service utilities, such as gas works, electric lighting plants, and street railway systems; the advantages and disadvantages of municipal trade; municipal trade and socialism. Lectures and recitations. *Mon., Wed., Fri., 9.45.* (S)
PROFESSOR METCALF

7. The History of Economics: an account of the beginnings, the progress, and the various schools of economic science; study of the writings of Adam Smith, Ricardo, Mill, and others. Political Science 7 is open to advanced students who are specializing in the department. A reading knowledge of French and German is desirable. *Mon., Wed., Fri., 4.00.* (S)
PROFESSOR METCALF

9. Seminar in Economics and Sociology, designed for advanced students who are specializing in the department. Questions in economics, statistics, or sociology may be selected. *Hours and credit to be arranged with the instructor.* PROFESSOR METCALF

MATHEMATICS

PROFESSOR WREN AND PROFESSOR RANSOM

The aim of the instruction in mathematics is to cultivate power of exact thinking, as well as skill in symbolic methods of drawing necessary conclusions. The class-room work is a combination of lectures with questioning of the students to ascertain that the points presented have been duly comprehended.

Mathematics 3, with 1 or 2, constitutes the required work in mathematics. The two required subjects should be taken in

the Freshman year. Students who intend to pursue advanced work in the department should take 1 in preference to 2, and should take 4, 5, and 6 in the Sophomore and Junior years. They may then elect any of the remaining subjects.

Certain subjects in the Engineering School are of great value in supplementing and illustrating mathematical studies. Attention is called especially to Drawing 21-5 (which must be preceded by 21-1), to Civil Engineering 41-1 and 41-2, and courses in Applied Mechanics and Structural Engineering.

SUBJECTS

3. Trigonometry. *Tu., Th., Sat.: Division (a), 8.45; Division (b), 9.45.* (F) PROFESSOR WREN

1. Algebra: *Division (a), Tu., Th., Sat., 8.45; Division (b), 9.45.* (S) PROFESSOR WREN

2. Solid Geometry. *Tu., Th., Sat., 9.45.* (S) PROFESSOR RANSOM

4. Analytic Geometry. *Mon., Wed., Fri., 10.45.* (F) PROFESSOR WREN

5. Elements of the Calculus. *Mon., Wed., Fri., 10.45.* (S) PROFESSOR WREN

6. Differential and Integral Calculus. *Mon., Wed., Fri., 9.45.* (F) PROFESSOR WREN

7. Differential and Integral Calculus (advanced). *Mon., Wed., Fri., 9.45.* (S) PROFESSOR WREN

9. Theory of Equations and Determinants. *Three hours for the first half-year.* PROFESSOR RANSOM

10. Differential Equations. *Three hours for the second half-year.* PROFESSOR WREN

12. Quaternions. *Three hours for the first half-year.* PROFESSOR WREN

Mathematics 12 is open to students who have completed Mathematics 1, 2, 3, and 4.

14. Theoretical Mechanics. *Hours to be arranged.* PROFESSOR RANSOM

PHYSICS

PROFESSOR H. G. CHASE

Two subjects are open to those who are beginning Physics. Physics 1 is intended for students in the School of Liberal

Arts who are taking but six hours in physics as a part of the prescribed work in science. Physics 31-1 is a subject for engineers and those who are to continue the work of the department. All candidates for the degree of Bachelor of Science are required to take Physics 31-1, 31-2, 31-3, and 31-4. Major students in the department are not admitted to Physics 1. A text-book is used in each subject, practical comments and additional material are supplied, and frequent lectures are given, with experiments. The aim is to present the science of physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, from which all the various phenomena are deducible. In each branch there are frequent returns to these first principles.

In the laboratory students are given a syllabus of the work for a guide. This syllabus is supplemented by Glazebrook's Physical Optics; Kaulrausch's Measurements; Stewart and Gee's Practical Physics, vols. 1 and 2; Glazebrook and Shaw's Practical Physics; Nichols's Laboratory Manual, vols. 1 and 2; and Watson's Practical Physics. In addition to the experimental and note-book work, many problems are solved.

The attention of major students in the department is called to the courses offered in the department of Electrical Engineering, and to the work in Applied Mechanics. Major students are strongly advised to elect the course in Mechanical Drawing.

SUBJECTS

1. General Physics. Lectures and experiments. Physics 1 is to be taken by students who choose physics for their prescribed science subject, and who do not intend to continue the work of the department. *Mon., Wed., Fri., 10.45.* PROFESSOR H. G. CHASE

Mathematics 3 must precede or accompany Physics 1.

31-1. Mechanics and Sound. Physics 31-1 is introductory to all the other subjects offered by the department, except Physics 1. *Tu., Th., Sat., 11.45.* (S) PROFESSOR H. G. CHASE AND MR. MORLEY

Mathematics 3, or its equivalent, must precede Physics 31-1.

31-2. Electricity and Magnetism, and Light. *Tu., Th., Sat., 10.45 or 11.45.* (F) PROFESSOR H. G. CHASE AND MR. MORLEY

31-3. Mechanics and Heat. *Tu., Th., Sat., 10.45, or the same days at 11.45.* (S) PROFESSOR H. G. CHASE AND MR. MORLEY

31-4. Physical Laboratory. *Mon., Wed., 8.45 to 11.45, or Tu., Th., 2 to 5.* (F); *and Mon., Wed., 8.45 to 11.45, or 2 to 5, or Tu., Th., 2 to 5.* (S)
PROFESSOR H. G. CHASE AND MR. MORLEY

2. Electricity. Thompson's Elementary Lessons in Electricity and Magnetism. Lectures and recitations. *Mon., Wed., Fri., 11.45.* (S)
PROFESSOR H. G. CHASE OR MR. MORLEY

31-5. Electricity. Elementary Mathematical Treatment. *Tu., Th., Sat., 8.45.* (F) PROFESSOR H. G. CHASE AND PROFESSOR HOOPER

31-6. Electrical Laboratory. Measurements and Tests. *Counting as two term hours. Tu., Th., 9.45 to 12.45; or Tu., Th., 2 to 5.* (F)
MR. ROLLINS AND MR. MUNRO

Physics 31-6 must be preceded by Physics 31-5.

6. Light and Sound. Recitations, lectures, and laboratory work. *Counting as six term hours. Hours to be arranged.*
PROFESSOR H. G. CHASE

[9. Heat. Lectures and recitations, based on Preston's Theory of Heat. Mathematics 6 is a prerequisite of Physics 9. *Counting as three term hours.* (F) *Hours to be arranged.* PROFESSOR H. G. CHASE]

NOTE. Courses numbered 31-1 and over are intended primarily for Engineers.

CHEMISTRY

PROFESSOR DURKEE AND ASSISTANT PROFESSOR COBB

The work in the department begins with Chemistry 1, which is open for election by the students of the courses in liberal arts, and is required of engineering students in their second year. The instruction is by means of lectures, recitations, and laboratory work. The lectures, illustrated with numerous experiments, are intended to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including a brief account of the chemistry of the carbon compounds and the principal technical processes. One-half of the time devoted to this subject is given to practical work in the laboratory, and the student has an opportunity to verify some of the chemical theories, and to become familiar with substances and their chemical behavior. The lectures are supplemented with recitations and written exercises. An opportunity to continue the study of theoretical and advanced inorganic chemistry is

afforded by subject 11, a course of lectures with laboratory practice, in which simple physical and chemical measurements are made, and some of the less common preparations.

The instruction in qualitative analysis is given through a year, in two subjects (2 and 3), taught in part by lectures and recitations, but mainly by work in the laboratory. During the advanced course the student is required to analyze correctly alloys, mixtures of salts, minerals, slags, and other metallurgical products. Quantitative analysis is taught for the most part in the laboratory, and is designed to give the student the theoretical knowledge and skill in manipulation which are necessary for success in this kind of work. In subject 4 the student is required to analyze the simpler salts, alloys, and minerals. In subject 5 water and the more complicated minerals, ores, and commercial and food products are analyzed. Organic analysis is included in subject 5. Technical gas analysis (subject 9) is taught by lectures and laboratory work. The Orsat, Hempel, and Elliott systems are used. Assaying (subject 7) is adapted to familiarizing the student with the practical methods and theory of sampling and assaying gold and silver ores. The above subjects cover a comprehensive study of analytic chemistry, and are intended to give the student such thorough theoretical and practical knowledge as to prepare him for analytical work of almost any description. Metallurgy (subject 8) is intended to give the student some of the more important methods of extracting gold and silver from ores. It should be taken after or in connection with Fire Assay (subject 7). The metallurgy of iron and steel is an alternative.

The work in organic chemistry consists of a course of experimental lectures, together with recitations and laboratory work, which are designed to cover the general principles and methods, and include a description of the most important organic compounds. The laboratory practice in organic chemistry will be carried on in connection with subject 10, and will include the preparation of many typical compounds.

In Chemistry 12, opportunity will be given advanced students,

under the direction of instructors, for the consideration and discussion of chemical subjects and recent investigations.

The quantitative and organic laboratories are open from nine to five o'clock daily, Saturday afternoons excepted.

SUBJECTS

1. General Chemistry. Lectures, recitations, and laboratory work. *Lecture, Wed., Fri., 11.45; three hours of laboratory work, Mon., 2.00 to 5.00. Counting as six term hours.*

PROFESSOR DURKEE, ASSISTANT PROFESSOR COBB, AND ASSISTANTS

2. Qualitative Analysis. Basic analysis. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00* (F) *Counting as three term hours.*

PROFESSOR DURKEE AND ASSISTANTS

3. Qualitative Analysis. Acids, analysis of salts, commercial and natural products. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00.* (S) *Counting as three term hours.*

PROFESSOR DURKEE AND ASSISTANTS

After 1909-10 Chemistry 2 and 3 will be known as Chemistry 35-2 and 35-3, each counting as two term hours.

4. Quantitative Analysis. Gravimetric and volumetric analysis; analysis of minerals. Lectures and laboratory work. *Mon., Wed., Fri., 2.00 to 5.00. Counting as six term hours.* PROFESSOR DURKEE

5. Quantitative Analysis (advanced course). Analysis of minerals, ores, water, food products, organic analysis. Laboratory work. *Mon., Wed., Fri., 2.00 to 5.00. Counting as six term hours.* PROFESSOR DURKEE

7. Fire Assay. Open to students who have taken 1, 2, 3, and 4. *Tu., Th., 2.00 to 5.00.* (S) *Counting as two term hours.*

PROFESSOR DURKEE

8. Metallurgy of Gold and Silver. Lectures, recitations, and laboratory work. Chemistry 8 is open to students who have taken Chemistry 1. Metallurgy of iron and steel is alternative. *Wed., Fri., 10.45.* (S) *Counting as two term hours.* PROFESSOR DURKEE

9. Gas Analysis. Lectures and laboratory work. Chemistry 9 is open to students who have taken Chemistry 1, 2, 3, and 4. *Mon., 2.00 to 5.00. Counting as one term hour.* (F) PROFESSOR DURKEE

10. Organic Chemistry. Lectures, recitations, and laboratory work. Chemistry 10 is open to students who have taken Chemistry 1. *Mon., Wed., Fri., 8.45. Three hours of laboratory work, to be arranged with the instructor. Counting as nine term hours.* ASSISTANT PROFESSOR COBB

After 1909-10 Chemistry 10 will be known as Chemistry 35-10, counting as eight term hours.

11. Theoretical and Advanced Inorganic Chemistry. Lectures, recitations, and laboratory work. Chemistry 11 is open to students who have taken Chemistry 1, 2, and 4. *Lectures, Tu., Th., 8.45. Two hours of laboratory work, to be arranged with the instructor. Counting as six term hours.* ASSISTANT PROFESSOR COBB

12. Discussion of Chemical Subjects and Recent Investigations. *One hour a week.* PROFESSOR DURKEE AND ASSISTANT PROFESSOR COBB

14. Medical Chemistry. Lectures, quizzes, and laboratory work. (F) *Counting as thirteen term hours.* PROFESSOR BALCH AND DR. THORPE

Chemistry 14 must be preceded by Chemistry 1, 2, and 3. It is given at the Tufts Medical School, 416–430 Huntington Avenue, Boston.

15. Applied Chemistry. A course dealing with the most important applications of inorganic and organic chemistry to manufacturing purposes, such as the production of sulphuric acid, soda, illuminating gas, and sugar. Lectures, visits to plants, text-book work, and recitations. *Two periods a week for the year, counting as four term hours.* PROFESSOR DURKEE

[16. Thesis. Investigation of a problem in Inorganic, Organic, or Technical Chemistry. Open to students of A.B. and Science Courses who have satisfactorily completed Chemistry 1, 2, 3, 4, 5, and 10. *Nine laboratory hours a week for the year, to be arranged. Counting as six term hours.* PROFESSOR DURKEE AND ASSISTANT PROFESSOR COBB]

BIOLOGY

PROFESSOR KINGSLEY AND ASSISTANT PROFESSOR LAMBERT

Instruction in biology is given both by lectures and by laboratory work, the object being to impart the scientific method of work and thought rather than to cram the student with a large number of unimportant facts. In the laboratory, eighty hours of work for each half-year is the minimum, but mere time service is not sufficient: a certain series of forms must be studied, to the satisfaction of the instructors.

Biology 1 is intended for those who wish to take but a single year of work in this department. Major students, and candidates for the degree of Bachelor of Science in the General Science or the Medical Preparatory Course, will take Biology 2 and 3 in its place. Special students, coming for a single year before entering the Medical School, will take Biology 3.

By special arrangement with the instructor, additional work may be done in connection with Biology 2 and 3, and corresponding credit will be given. Intention of doing such work

must be indicated at the time of registration, and the student must also attain grade B in order to obtain such credit.

Three of the subjects in this department (4M, 5M, and 9) are given at the Medical School, 416-430 Huntington Avenue, Boston. These subjects may be taken by candidates for the bachelor's degree, and in this way students contemplating the study of medicine may anticipate one year of their professional course. Those who wish these subjects to count for the bachelor's degree must have previously taken at least Biology 3.

There are three well-lighted laboratories, furnished with every requisite for good work, including microscopes, microtomes, reagents, and abundant material for illustration and dissection. There is also a department library containing more than 3,000 volumes and over 7,000 pamphlets and parts of volumes, while the college library contains the proceedings of many learned societies, both American and foreign. Besides these, proximity to Boston and Cambridge gives easy access to library facilities unequaled in any other part of America. There is required from all students taking laboratory subjects a laboratory fee of two-dollars-and-a-half a term for each subject, payable in advance.

SUBJECTS

1. General Biology. Lectures and laboratory work. *Mon., Fri.: lecture, 11.45; laboratory, Mon., Fri., afternoons, 128 hours. Counting as six term hours.* PROFESSOR KINGSLEY AND ASSISTANT PROFESSOR LAMBERT

2. Morphology of Invertebrates. Lectures and laboratory work. *Tu., Th.: lecture, 4.00; laboratory, Tu., Th., afternoons, 128 hours. Counting as six term hours.* PROFESSOR KINGSLEY

Biology 2 is given in alternate years. It will not be given in 1910-11.

3. Morphology of Vertebrates. Continuation of Biology 2. *Tu., Th.: lecture, 11.45; laboratory, Tu., Th., afternoons, 128 hours. Counting as six term hours.* PROFESSOR KINGSLEY

4M. Human and Comparative Physiology. Lectures, recitations, conferences, and laboratory work. *Counting as thirteen term hours.* (S) PROFESSOR DEARBORN

Biology 4M is given at the Tufts Medical School, Boston.

5M. Histology, Medical. Lectures, quizzes, and laboratory work. *Counting as five term hours.* (F) PROFESSOR BATES AND DR. WINSLOW

Biology 5M is given at the Tufts Medical School, Boston.

6. Systematic Zoology. Laboratory work in the identification and classification of specimens. *Counting as three term hours.* (F) or (S)

PROFESSOR KINGSLEY

Biology 6 requires ability to read French and German.

7. Botany. Lectures and laboratory work. *Tu., Thu.: lecture, 8.45; laboratory, afternoons, 128 hours. Counting as six term hours.*

ASSISTANT PROFESSOR LAMBERT

8. Special Work. The investigation of some problem. *Three hours or more of credit, at the rate of thirty-two hours of laboratory work for one hour of credit.* PROFESSOR KINGSLEY

9. Human Anatomy. Lectures, quizzes, and dissection. *Counting as thirteen terms hours.* (F) PROFESSOR H. H. GERMAIN

Biology 9 is given at the Tufts Medical School, Boston.

GEOLOGY

PROFESSOR LANE

The subjects offered in the department of Geology do not form a sequence, but are intended to give different classes of students that knowledge of geology and mineralogy which they need. In all cases, they aim to include some real grasp upon the structure and history of the earth, the problems presented in the study thereof, and the modes of attack upon those problems. The first subject (Geology 1) is introductory, open to all, and intended primarily for those who have had no previous work in science. The other subjects are such that certain preliminary studies, stated in connection with each, must be taken before entering upon them.

The illustrative collections in these lines are ample. Besides exhibition specimens in the Barnum Museum, there is a working collection illustrating mineralogy, lithology, and dynamical and historical geology. These are supplemented with maps, diagrams, photographs, and lantern slides. The work in each subject consists of lectures and recitations, together with work in the laboratory and in the field. Excursions are taken to neighboring points that illustrate certain phenomena. Tufts College is well placed for field work and for the study of various natural processes. The laboratory fees are four dollars for each subject in mineralogy, and two dollars in geology.

under the direction of instructors, for the consideration and discussion of chemical subjects and recent investigations.

The quantitative and organic laboratories are open from nine to five o'clock daily, Saturday afternoons excepted.

SUBJECTS

1. General Chemistry. Lectures, recitations, and laboratory work. *Lecture, Wed., Fri., 11.45; three hours of laboratory work, Mon., 2.00 to 5.00. Counting as six term hours.*

PROFESSOR DURKEE, ASSISTANT PROFESSOR COBB, AND ASSISTANTS

2. Qualitative Analysis. Basic analysis. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00* (F) *Counting as three term hours.*

PROFESSOR DURKEE AND ASSISTANTS

3. Qualitative Analysis. Acids, analysis of salts, commercial and natural products. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00.* (S) *Counting as three term hours.*

PROFESSOR DURKEE AND ASSISTANTS

After 1909-10 Chemistry 2 and 3 will be known as Chemistry 35-2 and 35-3, each counting as two term hours.

4. Quantitative Analysis. Gravimetric and volumetric analysis; analysis of minerals. Lectures and laboratory work. *Mon., Wed., Fri., 2.00 to 5.00. Counting as six term hours.* PROFESSOR DURKEE

5. Quantitative Analysis (advanced course). Analysis of minerals, ores, water, food products, organic analysis. Laboratory work. *Mon., Wed., Fri., 2.00 to 5.00. Counting as six term hours.* PROFESSOR DURKEE

7. Fire Assay. Open to students who have taken 1, 2, 3, and 4. *Tu., Th., 2.00 to 5.00.* (S) *Counting as two term hours.*

PROFESSOR DURKEE

8. Metallurgy of Gold and Silver. Lectures, recitations, and laboratory work. Chemistry 8 is open to students who have taken Chemistry 1. Metallurgy of iron and steel is alternative. *Wed., Fri., 10.45.* (S) *Counting as two term hours.* PROFESSOR DURKEE

9. Gas Analysis. Lectures and laboratory work. Chemistry 9 is open to students who have taken Chemistry 1, 2, 3, and 4. *Mon., 2.00 to 5.00. Counting as one term hour.* (F) PROFESSOR DURKEE

10. Organic Chemistry. Lectures, recitations, and laboratory work. Chemistry 10 is open to students who have taken Chemistry 1. *Mon., Wed., Fri., 8.45. Three hours of laboratory work, to be arranged with the instructor. Counting as nine term hours.* ASSISTANT PROFESSOR COBB

After 1909-10 Chemistry 10 will be known as Chemistry 35-10, counting as eight term hours.

11. Theoretical and Advanced Inorganic Chemistry. Lectures, recitations, and laboratory work. Chemistry 11 is open to students who have taken Chemistry 1, 2, and 4. *Lectures, Tu., Th., 8.45. Two hours of laboratory work, to be arranged with the instructor. Counting as six term hours.* ASSISTANT PROFESSOR COBB

12. Discussion of Chemical Subjects and Recent Investigations. *One hour a week.* PROFESSOR DURKEE AND ASSISTANT PROFESSOR COBB

14. Medical Chemistry. Lectures, quizzes, and laboratory work. (F) *Counting as thirteen term hours.* PROFESSOR BALCH AND DR. THORPE

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15. Applied Chemistry. A course dealing with the most important applications of inorganic and organic chemistry to manufacturing purposes, such as the production of sulphuric acid, soda, illuminating gas, and sugar. Lectures, visits to plants, text-book work, and recitations. *Two periods a week for the year, counting as four term hours.* PROFESSOR DURKEE

[16. Thesis. Investigation of a problem in Inorganic, Organic, or Technical Chemistry. Open to students of A.B. and Science Courses who have satisfactorily completed Chemistry 1, 2, 3, 4, 5, and 10. *Nine laboratory hours a week for the year, to be arranged. Counting as six term hours.* PROFESSOR DURKEE AND ASSISTANT PROFESSOR COBB]

BIOLOGY

PROFESSOR KINGSLEY AND ASSISTANT PROFESSOR LAMBERT

Instruction in biology is given both by lectures and by laboratory work, the object being to impart the scientific method of work and thought rather than to cram the student with a large number of unimportant facts. In the laboratory, eighty hours of work for each half-year is the minimum, but mere time service is not sufficient: a certain series of forms must be studied, to the satisfaction of the instructors.

Biology 1 is intended for those who wish to take but a single year of work in this department. Major students, and candidates for the degree of Bachelor of Science in the General Science or the Medical Preparatory Course, will take Biology 2 and 3 in its place. Special students, coming for a single year before entering the Medical School, will take Biology 3.

By special arrangement with the instructor, additional work may be done in connection with Biology 2 and 3, and corresponding credit will be given. Intention of doing such work

SUBJECTS

[1. Physical Geology and Geography. Lectures and recitations; laboratory and field work. *Hours to be arranged.* (S) *Counting as three term hours.* PROFESSOR LANE]

2. General and Economic Geology. Lectures, recitations, laboratory and field work, six hours a week; open to students who have taken Physics 1, Mathematics 3, and Chemistry 1. *Hours to be arranged. Counting as six term hours.* PROFESSOR LANE

[3. Mathematical Problems presented to geologists. Conferences and critical reading of selected papers and original work. Mathematics 4 must precede Geology 3; Mathematics 6 must precede or accompany it. *Counting as six term hours.* PROFESSOR LANE]

[4. Field Geology. Conference, one hour; field work, six hours a week; open to students who have taken Geology 2. *First part of first and last part of second half-year. Counting as three term hours.* PROFESSOR LANE]

MINERALOGY

1. Mineralogy and Lithology. Recitations (Pirrson) two hours; laboratory, four hours a week; open to students who have taken Chemistry 1. *Tu., Th., Sat., 10.45 to 12.45.* (F) *Counting as three term hours.* PROFESSOR LANE

Mineralogy 1 alone may be of use to civil and structural engineers, but those who are looking to mining or chemical engineering should take both courses, if any.

2. Crystallography and Descriptive Mineralogy. Lectures, two hours a week; laboratory work, four hours a week; open to students who have taken Mineralogy 1. *Tu., Th., Sat., 10.45 to 12.45.* (S) *Counting as three term hours.* PROFESSOR LANE

DRAWING AND ENGINEERING

Subjects in Drawing, and in Civil, Structural, Mechanical, and Electrical Engineering, are open to competent students who are not looking for a technical course. For a list of those subjects, the hours, and the preparation required, consult the announcement of the Engineering School.

MUSIC

PROFESSOR LEWIS

The department of Music offers opportunities to gain a knowledge of musical history and of the principles of composition, as a basis for practical work in music or in musical criticism.

The subjects, Elements of Theory, Harmony, General History of Music, and Musical Appreciation may well be taken, however, by students who have no intention of preparing themselves for professional work in the art.

SUBJECTS

9. Musical Appreciation, Elementary. Systematic studies in musical form, from the listener's standpoint. *Three hours a week.* (F)
PROFESSOR LEWIS

☞Music 9 and 10 will be given in 1909-10 only if elected by at least fifteen students, including Seniors.

For Music 9 no technical preparation is requisite, but ability to recognize a melody is presupposed. Ability to follow a piano score is very helpful. Outside reading and laboratory study with automatic instruments are required.

10. Musical Appreciation, Intermediate. A continuation of Music 9. *Three hours a week.* (S) PROFESSOR LEWIS

1. Elements of Theory. Lectures, practice, and analysis, with various text-books for reference. *Tu., Th., 4.00, and a third hour, to be arranged.* (F)
PROFESSOR LEWIS

Only acquaintance with musical notation and with the piano keyboard is required. Music 1 is introductory to Music 21.

21. Harmony. Lectures and practical work, based on Chadwick's Manual of Harmony; collateral reading on biography and on theory. *Tu., 3.00 to 4.00; Th., 3.00 to 5.00.* (S) PROFESSOR LEWIS

[22. Advanced Harmony. A continuation of Music 21. *Three hours, to be arranged.* (F) PROFESSOR LEWIS]

[3. Sight-reading in Song, and Harmonic Analysis. *Three hours, to be arranged.* (S) PROFESSOR LEWIS]

Only those who have finished Music 22 may take Music 3. The harmonic analysis begun in Music 22 is continued, with special attention to the more difficult problems of modern music. Harmonic Analysis, by B. Cutter, and Melodia, by Cole and Lewis, are the text-books.

4. Counterpoint. Lectures and practical work, based on the manuals of Goetschius, Spalding, and others; collateral reading on biography and theory. *Three hours, to be arranged.* PROFESSOR LEWIS

A thorough theoretical knowledge of harmony, and facility in the harmonization of basses and choral melodies, are required of those who take Music 4. A full equivalent of Music 21 and 22 must have been done by students who wish to begin their college work with Music 4. Laboratory work with the automatic instruments is required.

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* this year are bracketed in department statements
The prefixed w signifies whole year; F, first half-year; S, second half-year
M Tu W Th F S indicate days for two-period and one-period subjects

MONDAY, WEDNESDAY, FRIDAY

	8.45	9.45	10.45	11.45
HAMILTON				
LEONARD				
BOLLES	Hst w2, 22		Hst w3, 33	
HARMON				
FAY	Ger w6	Frn w6	Ger w5	
TOUSEY			Phl F6, S7	Phl w15
KNIGHT				
WOODBRIDGE				
KINGSLEY				Bio w1 MF
LANE				
CUSHMAN				
L. R. LEWIS	Frn w2	Frn w1		
MAULSBY	Eng F17	Eng w25, 26	Eng s19	Eng w11, 12
DURKEE			*Chm s8* WF	*Chm w1* WF *lect*
DENISON		ClA F1,3, 5		Lat w1a
EVANS			Hst w1	PbL F1,4,5,S2,7
H. G. CHASE			Phs w1	Phs s2
METCALF	PlS F180, s3	PlS F2,22,S8		
WADE		ClA s2, 4, 6		Grk w1
WHITTEMORE	Eng F38, s18	FnA w1, F2, s3		Eng w15
WREN		Mth F6, S7	Mth F4, s5	
LAMBERT		. . *Laboratory*	*appointments* .	
RANSOM				
REED	Ger w2	Ger w1		
COBB	Chm w10			
MARTIN				

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* this year are bracketed in department statements
Subjects in Roman type occupy three periods
Subjects in *Italic* type occupy two periods; in **Boldface** type, one period

MONDAY, WEDNESDAY, FRIDAY

	2.00	3.00	4.00	5.00*
HAMILTON				
LEONARD				
BOLLES				
HARMON		HR F3		HR S2
FAY	Frn W4			
TOUSEY				
KNIGHT				
WOODBRIDGE			HR W1	
KINGSLEY	. . *Laboratory appointments* .		. . . . .	ScGer
LANE				
CUSHMAN				Phl W55, 9
L. R. LEWIS		Frn W5		Mus W4, S6, F22
MAULSBY				Eng S4, 8, W28
DURKEE	. . *Laboratory appointments* .		. . . . .	*Chm W15*
DENISON				Lat W3, 4
EVANS		Hst F4, 6, S5, 7		Hst W15
H. G. CHASE	. . *Laboratory appointments* .		. . . . .	
METCALF			PlS S7	
WADE	Grk W2			Grk W11
WHITTEMORE				Eng F23, S21
WREN				
LAMBERT	. . *Laboratory appointments* .		. . . . .	
RANSOM				Mth W14
REED				
COBB	. . *Laboratory appointments* .		. . . . .	
MARTIN			PhsTrn	Phs Trn

*Hours in this column are subject to re-assignment during the opening week

Courses in Science*

The special courses in Science lead to the degree of Bachelor of Science. Like the Engineering courses, they are placed upon a technical basis, and far less latitude is allowed the student in the choice of subjects than in the course in Arts.

Three courses are provided: the Course in General Science, designed mainly to prepare teachers in science for the secondary schools; the Chemical course, designed to fit the student for the industrial applications of chemistry, and for the advanced study of chemistry; and the Medical Preparatory Course, an introduction to the professional study of medicine. Graduates of the Medical Preparatory Course anticipate one year of the four years of study required at the Tufts Medical School.

The studies of the First Year are alike for all three courses. For description of subjects, see "Departments of Instruction."

FIRST YEAR

[Alike for the three courses in science]

First Term	No.	Term Hours	Second Term	No.	Term Hours
English	1	3	English	2	3
Mathematics	3	3	Mathematics	1 (or 2)	3
†German	2 (or 3)	3	†German	2 (or 3)	3
Physics	1	3	Physics	1	3
Chemistry	1	3	Chemistry	1	3
Physical Training			Physical Training		1

* For entrance requirements to the Courses in Science, see page 7.

† If the equivalent of German 3 is presented for entrance, the language work of the first year will be in French.

GENERAL SCIENCE COURSE*

MAJOR INSTRUCTOR, PROFESSOR H. G. CHASE

First Year, alike for all science courses. See page 105

Second Year

FIRST TERM	No.	Term Hours	SECOND TERM	No.	Term Hours
Biology	2 (or 3)	3	Biology	2 (or 3	3
Chemistry	2	3	Chemistry	3	3
Physics	31-2	3	Physics	31-3	3
Physics	31-4	3	Physics	31-4	3
Mathematics	4	3	Mathematics	5	3
Physical Training			Physical Training		1

At the close of the Second Year the student will be expected to choose Physics, Chemistry, or Biology as a major department, and thereafter his work will be under the direction of the head of the department chosen.

Third Year

FIRST TERM	No.	Term Hours	SECOND TERM	No.	Term Hours
Chemistry	4	3	Chemistry	4	3
Biology	3 (or 2)	3	Biology	3 (or 2)	3
Geology		3	Geology		3
or, in place of Geology, a subject in			*or*, in place of Geology, a subject in		
Physics, or			Physics, or		
Mathematics, or			Mathematics, or		
Engineering			Engineering		

Also, in the Third Year, six program hours of elective work for each term, of which three hours in each term shall be in language, literature, or mental and moral science (see foot-note, page 77).

Fourth Year

Biology 7 (three program hours); also, three hours for each term, to be chosen from the group of mental and moral science (see foot-note, page 77); and nine hours of elective work for each term, of which three for each term shall be in language, literature, or mental and moral science.

* The order of subjects in these courses may be altered in consequence of a probable revision of the program for the year 1910-11.

CHEMICAL COURSE*

MAJOR INSTRUCTOR, PROF. F. W. DURKEE

First Year, alike for all science courses. See page 105

Second Year

FIRST TERM	No.	Term Hours	SECOND TERM	No.	Term Hours
Chemistry	2	3	Chemistry	3	3
Chemistry	4	3	Chemistry	4	3
Physics	31-2	3	Physics	31-3	3
Physics	31-4	3	Physics	31-4	3
German	3	3	German	3	3
or French			*or* French		
Physical Training			Physical Training		1

Third Year

FIRST TERM	No.	Term Hours	SECOND TERM	No.	Term Hours
Chemistry	5	3	Chemistry	5	3
Chemistry	9	1	Chemistry	7	2
Chemistry	10	4½	Chemistry	10	4½
Biology	1	3	Biology	1	3
Mineralogy		3	Mineralogy		3

Fourth Year

FIRST TERM	No.	Term Hours	SECOND TERM	No.	Term Hours
Geology		3	Geology		3
Chemistry	11	3	Chemistry	8	2
			Chemistry	11	3

Also, for the Fourth Year, six program hours of free elective for the first term, and three for the second; and three program hours for each term, to be chosen from the group of mental and moral science (see foot-note, page 77).

* See foot-note on opposite page.

MEDICAL PREPARATORY COURSE†

MAJOR INSTRUCTOR, PROF. J. S. KINGSLEY

First Year, alike for all science courses. See page 105

Second Year

FIRST TERM	No.	Term Hours	SECOND TERM	No.	Term Hours
Chemistry	2	3	Chemistry	3	3
Biology	(2 or 3)	3	Biology	2(or 3)	3
Physics	31-2	3	Physics	31-4	3
Physics	31-4	3	*German	3	3
*German	3	3	*or* French		
or French			Physical Training		1
Physical Training			One elective		3

Third Year

FIRST TERM	No.	Term Hours	SECOND TERM	No.	Term Hours
*German	3B	3	*German	3B	3
Philosophy	3	3	Biological German		3
Biology	3 (or 2)	3	Biology	3 (or 2)	3
Chemistry	10	4½	Chemistry	10	4½
One elective		3	One elective		3

Fourth Year

FIRST TERM	No.	Term Hours	SECOND TERM	No.	Term Hours
Biology	9	13	Biology	4M	13
Chemistry	14	13	Biology	5M	5

*If the equivalent of German 3 is presented for entrance, German 3B will constitute the language work for the Second Year, thus opening an additional elective in the Third Year.

† See the foot-note under General Science Course.

ENGINEERING SCHOOL

Faculty of the Engineering School

RESIDENCE*

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT, 8 Professors Row

GARDNER C. ANTHONY, A.M., Sc.D., DEAN . . 14 Professors Row
Professor of Technical Drawing. Acting Head of Department of Mechanical Engineering

PHILIP M. HAYDEN, A.B., SECRETARY . . . . . Dean Hall, 6
Instructor in French and Registrar

CHARLES E. FAY, A.M., LITT.D. . . . . 92 Professors Row
Wade Professor of Modern Languages

WILLIAM L. HOOPER, A.M., PH.D. . . . . 124 Professors Row
Professor of Electrical Engineering

ALFRED C. LANE, A.M., PH.D. 1775 Massachusetts Ave., Cambridge
Pearson Professor of Geology and Mineralogy

FRANK B. SANBORN, C.E., M.S. . . 8 Buena Vista Park, Cambridge
Professor of Civil Engineering

FRANK W. DURKEE, A.M. . . . . 38 Professors Row
Professor of Inorganic Chemistry

EDWARD H. ROCKWELL, S.B. . . . 133 Powder House Boulevard, W. Somerville
Professor of Structural Engineering

CHARLES H. CHASE, S.B. . . . . 39 Lincoln St., Stoneham
Professor of Steam Engineering

HARRY G. CHASE, B.S. . . . . 37 Sawyer Avenue
Professor of Physics

SAMUEL C. EARLE, A.M. . . . . 45 Sawyer Avenue
Professor of English

* The post office address is Tufts College, Mass., unless otherwise indicated.

HENRY C. METCALF, A.B., PH.D. . . 31 Sheffield Road, Winchester
Jackson Professor of Political Science

FRANK G. WREN, A.M. . . . . 65 Talbot Avenue
Walker Professor of Mathematics

SAMUEL L. CONNER, B.S. . . . . 8 Bellevue St.
Instructor in Railroad Engineering

WILLIAM R. RANSOM, A.M. . . . . 29 Sawyer Avenue
Professor of Mathematics

WILLIAM H. REED, JR., A.M. . . . . 81 Walnut Ave., Roxbury
Instructor in German and Spanish

GEORGE F. ASHLEY . . . . . 47 Avon St., Somerville
Assistant Professor of Technical Drawing

EDWIN B. ROLLINS, B.S. . . . . 38 Capen St.
Instructor in Electrical Engineering

CHARLES E. STEWART, S.B. . . . . 90 Bromfield Road
Assistant Professor of Mechanic Arts

JAMES I. TUCKER, B.S., LL.B. . . . . 45 Sawyer Avenue
Assistant Professor of Civil Engineering

PHILIP HOWARD COBB, A.B., PH.D. . . . . Dean Hall, 5
Assistant Professor of Organic and Physical Chemistry

HERBERT M. MORLEY, B.S., M.S. . . . . Talbot Ave.
Instructor in Physics

MELVILLE S. MUNRO, B.S. . . . . 101 Talbot Avenue
Instructor in Electrical Engineering

FRANK E. SEAVEY, A.B. . . . . 44 Teele Ave., W. Somerville
Instructor in English

RICHARD C. SMITH, B.S. . . . . 31 Dudley St., Medford
Instructor in Structural Engineering

ALEXANDER DILLINGHAM, A.M. . . . . Paige Hall, 3
Instructor in Mathematics

)WARD J. SAVAGE, A.M. . . . . West Hall, 17
Instructor in English

CARL L. SVENSEN, B.S. . . . . 46 Hillsdale Road
Instructor in Mechanical Engineering

RAY W. CLOUGH, A.M. . . . . East, 10
Instructor in Chemistry

CONRAD A. ADAMS, B.S. . . . . 101 Talbot Ave.
Instructor in Mechanic Arts

EDWARD H. CROLL, PH.B. . . . . 96 Packard Ave., W. Somerville
Assistant in Drawing

OSCAR MARTIN . . . . . West, 7
Instructor in Physical Training and Director of the Gymnasium

OTHER OFFICERS

HERBERT TRUE BROWN* . . . . . Tufts College
Bursar

EUGENE EVERETT SHEPARD . . . . . W. Medford
Acting Bursar

FRED W. SEAVEY . . . . . 44 Teele Ave., W. Somerville
Assistant in the Office of the Dean

FREDERIC A. BRUCE . . . . . 120 Curtis St.
Superintendent of Buildings

COMMITTEE ON PROMOTIONS

Dean Anthony, *Chairman;* Professors Hooper, Durkee, Ransom, and Stewart.

COMMITTEE ON CURRICULUM

Dean Anthony, *Chairman;* Professors Hooper, Sanborn, Durkee, Rockwell, C. H. Chase, and Earle.

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* Absent on leave.

Courses of Instruction

The School offers courses of four years in CIVIL ENGINEERING, MECHANICAL ENGINEERING, ELECTRICAL ENGINEERING, and CHEMICAL ENGINEERING, each leading to the degree of Bachelor of Science. These courses are arranged to give considerable freedom of election.

While much of the instruction is given in engineering subjects, the first aim of the School is the development of a broad college training. An effective correlation of the work of the several courses serves to promote a greater degree of unity and to secure an educational result both scientific and cultural.

One hundred and forty term hours* are required for graduation, this being the equivalent of about fifty-two hours of work per week, including the time for recitations, laboratory work, and preparation. A grade of C or higher must be attained in at least seventy term hours. The figure following the name of the subject in the tables below represents the number of term hours assigned to that subject.

The subjects of instruction in the Freshman year given below, are alike and those for the three following years are tabulated under the following heads: Civil Engineering, with option in Structual Engineering; Mechanical Engineering; Electrical Engineering; Chemical Engineering. The system of numbering and details of these courses are published on pages 128 ff. The subjects are printed in their numerical order.

FRESHMAN YEAR

[Alike for all courses.]

	First Term			Second Term		
11-1	English	3	11-2	English	3
	†French or †German	3		†French or †German	3
21-1	Drawing	3	21-1	Drawing	2
25-1	Mechanic Arts	2	21-5	Descriptive Geometry	3
29-1	Mathematics	3	25-1	Mechanic Arts	1
29-2	Mathematics	3	29-3	Mathematics	3
	Physical Training	½	31-1	Physics	3
				Physical Training	½

*A term hour signifies one recitation per week requiring about two hours of preparation, or one laboratory period of three hours.

†As the course to be pursued in modern language is dependent on the preparation of each student, definite instruction for the selection thereof is given on pages 131 to 133.

CIVIL ENGINEERING

The first two years of the course in civil engineering include the fundamentals of an engineering education — mathematics, drawing, physics, chemistry, English, and modern languages. The last two years include the elements of general engineering — applied mechanics, railroad engineering, structural engineering, hydraulics, and sanitary engineering. Other studies are available as electives, so that the student has opportunity to specialize somewhat in his Junior and Senior years; but the aim of the course in civil engineering is to provide a general engineering education, broad and comprehensive, which will enable its graduates to advance rapidly in numerous fields of professional work.

In the Senior year an option is offered in structural engineering with the subjects tabulated on the opposite page.

FRESHMAN YEAR—alike for all courses.

SOPHOMORE YEAR

First Term			Second Term		
21-7	Drawing	2	21-11	Mechanism	2
29-4	Mathematics	3	29-5	Mathematics	3
31-2	Physics	3	31-3	Physics	3
31-4	Physical Laboratory	2	31-4	Physical Laboratory	2
35-1	General Chemistry	3	35-1	General Chemistry	3
41-1	Surveying	2	41-2	Surveying	2
	Physical Training	½		Physical Training	½
	Electives			*Electives*	
11-	English		11-	English	
13-	French	3	13-	French	3
	German	3		German	3
17-1	Spanish	3	17-1	Spanish	3
			25-5	Mechanic Arts	2

CIVIL ENGINEERING

JUNIOR YEAR

FIRST TERM			SECOND TERM		
35-2	Qualitative Analysis	2	41-13	Railroad Engineering	3
41-11	Railroad Surveying	2	41-43	Hydraulic Measurements	2
45-1	Applied Mechanics	3	45-2	Applied Mechanics	3
45-12	Applied Mechanics Laboratory	1	47-1	Roofs and Bridges	3
45-9	Mechanics Problems	2	47-5	Structural Design	2
51-1	Steam Engine	3			
	Electives			*Electives*	
11-	English		11-	English	
17-1	Spanish	3	17-1	Spanish	3
21-12	Mechanism	2		Mathematics	
25-7	Machine Shop	2	41-21	Highways	2
	Mathematics		41-51	Fire Protection Engineering	2
31-5	Electricity and Magnetism	3	51-3	Thermodynamics	3
41-62	Contracts	2	61-3	Dynamo-Electric Machinery	3

SENIOR YEAR

FIRST TERM			SECOND TERM		
41-14	Railroad Engineering	3	41-45	Hydraulic Engineering	3
41-41	Sanitary Engineering	3	41-99	Thesis	3-5
45-3	Structural Mechanics	3			
81-1	Political Economy	3			
	Electives			*Electives*	
11-	English			Mathematics	
	Mathematics		41-17	Railroads—Economic Location	3
41-31	Geodesy	2	47-2	Theory of Structures	3
41-95	Civil Engineering Topics	2	47-9	Bridge Design	2
47-6	Structural Design	2	61-3	Dynamo-Electric Machinery	3
			66-5	Political Economy	3
			66-16	Political Economy	3

SENIOR YEAR OPTION.—STRUCTURAL ENGINEERING

FIRST TERM			SECOND TERM		
41-14	Railroad Engineering	3	41-45	Hydraulic Engineering	3
41-41	Sanitary Engineering	3	47-2	Theory of Structures	3
45-3	Structural Mechanics	3	47-9	Bridge Design	2
47-6	Structural Design	2	47-99	Thesis	3-5
81-1	Political Economy	3			
	Electives			*Electives*	
11-	English			Mathematics	
	Mathematics		41-17	Railroads—Economic Location	3
41-31	Geodesy	2	66-5	Political Economy	3
41-95	Civil Engineering Topics	2	66-16	Political Economy	3

MECHANICAL ENGINEERING

The course of instruction in mechanical engineering relates particularly to machinery; its design, construction, and operation. The first two years are devoted to the preparatory studies common to all engineering courses, and include mathematics, physics, chemistry, drawing, and language, all of which have an important bearing upon the successful pursuit of the more technical subjects. Technical drawing and descriptive geometry receive much attention during the first year, and are more completely developed in the advanced work in mechanism and design.

In the last two years the technical work of the course is developed. It includes mechanics, both theoretical and applied, chemical analysis, and the properties of engineering materials, particularly iron and steel. The laboratory practice includes work in the physical, chemical, electrical, mechanical, and steam-engineering laboratories. In machine design each student prepares complete working drawings of some machine, or part of a machine. Shop work is carried through five terms, and includes carpentry, wood-turning, moulding, pattern making, forging, hand and machine tool-work.

The systematic study of steam and its application occupies a considerable part of the Junior and Senior years. The principles involved in the generation and application of power, the management of boilers and engines, the setting of valves and use of the indicator, are carefully considered. This is followed by work in thermodynamics, including the mechanical theory of heat and the properties of steam and gases. Steam engineering includes the study of the steam engine, compound and multiple expansion, and boilers of various types; determination of proportions for developing a required power; computation of sizes required for strength and endurance; the effect and balance of reciprocating parts, and the various types of valve motions. Engine and boiler testing constitute an important part of this course.

MECHANICAL ENGINEERING

FRESHMAN YEAR—alike for all courses.

SOPHOMORE YEAR

	First Term			Second Term	
21-7	Drawing	2	21-11	Mechanism	2
29-4	Mathematics	3	25-5	Mechanic Arts	2
31-2	Physics	3	29-5	Mathematics	3
31-4	Physical Laboratory	2	31-3	Physics	3
35-1	General Chemistry	3	31-4	Physical Laboratory	2
41-1	Surveying	2	35-1	General Chemistry	3
	Physical Training	½		Physical Training	½
	Electives			*Electives*	
11-	English		11-	English	
13-	French	3	13-	French	3
	German	3		German	3
17-1	Spanish	3	17-1	Spanish	3
			41-2	Surveying	2

JUNIOR YEAR

	First Term			Second Term	
21-12	Mechanism	2	21-21	Machine Design	2
25-7	Mechanic Arts	2	25-9	Mechanic Arts	2
31-5	Electricity and Magnetism	3	45-2	Applied Mechanics	3
35-2	Qualitative Analysis	2	51-3	Thermodynamics	3
45-1	Applied Mechanics	3	51-21	Mechanical Engineering Laboratory	2
45-12	Applied Mechanics Laboratory	1			
51-1	Steam Engine	3			
	Electives			*Electives*	
11-	English		11-	English	
17-1	Spanish	3	17-1	Spanish	3
	Mathematics			Mathematics	
31-6	Electrical Laboratory	2	47-1	Roofs and Bridges	3
41-62	Contracts	2	47-5	Structural Design	2
45-9	Mechanics Problems	2	61-1	Electrical Laboratory	2
			61-3	Dynamo-Electric Machinery	3

SENIOR YEAR

	First Term			Second Term	
21-22	Machine Design	2	41-45	Hydraulic Engineering	3
51-5	Valve Gears	2	51-9	Steam Engineering	3
51-7	Steam Engineering	3	51-23	Mechanical Engineering Laboratory	2
51-22	Mechanical Engineering Laboratory	2	51-99	Thesis	3-5
81-1	Political Economy	3			
	Electives			*Electives*	
11-	English			Mathematics	
	Mathematics		41-51	Fire Protection Engineering	2
45-3	Structural Mechanics	3	61-3	Dynamo-Electric Machinery	3
51-95	Mechanical Engineering Topics	2	61-6	Alternating Current Machinery	3
61-5	Alternating Current Machinery	3	66-5	Political Economy	3
61-21	Dynamo Design, D. C.	3	66-16	Political Economy	3

ELECTRICAL ENGINEERING

The aim of this course is to lay a broad foundation of Electrical Science upon which the future technical attainments of the electrical engineer may rest.

In common with the other engineering courses the first years are largely devoted to the study of physical science and mathematics and the attempt is made to familiarize the student with both the analytical and graphical methods of treating physical problems. The purely electrical work extends throughout the junior and senior years; that in the junior year being devoted to the more elementary theory, and the practice of the simpler tests and measurements, while that in the senior year is largely directed to the study of alternating currents and electrical machinery and to the more complicated tests of the alternating current and dynamo laboratories.

Throughout the course much attention is paid to the numerical solution of electrical problems, as it is believed that in no other way can theory and principles be so quickly and so clearly comprehended. A considerable amount of time is given to the design of electrical apparatus and machinery and many students during their course construct or assist in the construction of some instrument or piece of electrical machinery of commercial finish and dimensions.

The graduates of this course are advised to spend a couple of years in the apprenticeship courses or testing departments of the large electrical manufacturing companies in order that they get an intimate practical acquaintance with electrical apparatus and experience in handling and operating heavy machinery.

ELECTRICAL ENGINEERING

FRESHMAN YEAR—alike for all courses.

SOPHOMORE YEAR

FIRST TERM			SECOND TERM		
21-7	Drawing	2	21-11	Mechanism	2
29-4	Mathematics	3	25-5	Mechanic Arts	2
31-2	Physics	3	29-5	Mathematics	3
31-4	Physical Laboratory	2	31-3	Physics	3
35-1	General Chemistry	3	31-4	Physical Laboratory	2
41-1	Surveying	2	35-1	General Chemistry	3
	Physical Training	½		Physical Training	½
	Electives			*Electives*	
11-	English		11-	English	
13-	French	3	13-	French	3
	German	3		German	3
17-1	Spanish	3	17-1	Spanish	3
			41-2	Surveying	2

JUNIOR YEAR

FIRST TERM			SECOND TERM		
21-12	Mechanism	2	21-21	Machine Design	2
31-5	Electricity and Magnetism	3	45-2	Applied Mechanics	3
31-6	Electrical Laboratory	2	61-1	Electrical Laboratory	2
35-2	Qualitative Analysis	2	61-3	Dynamo-Electric Machinery	3
45-1	Applied Mechanics	3			
45-12	Applied Mechanics Laboratory	1			
51-1	Steam Engine	3			
	Electives			*Electives*	
11-	English		11-	English	
17-1	Spanish	3	17-1	Spanish	3
25-7	Mechanic Arts	2		Mathematics	
	Mathematics		47-1	Roofs and Bridges	3
41-62	Contracts	2	47-5	Structural Design	2
			51-3	Thermodynamics	3

SENIOR YEAR

FIRST TERM			SECOND TERM		
61-5	Alternating Current Machinery	3	41-45	Hydraulic Engineering	3
61-7	Electrical Laboratory	2	61-6	Alternating Current Machinery	3
61-21	Dynamo Design D. C.	3	61-7	Electrical Laboratory	2
61-11	Alternating Currents	3	61-99	Thesis	3-5
81-1	Political Economy	3			
	Electives			*Electives*	
11-	English			Mathematics	
21-22	Machine Design	2	47-2	Theory of Structures	3
	Mathematics		61-22*	Dynamo Design, A.C.	3
35-9	Gas Analysis	1	61-15	Electrical Engineering	3
41-41	Sanitary Engineering	3	61-17	Telephone and Telegraph	3
45-3	Structural Mechanics	3	61-95	Electrical Topics	3
			66-5	Political Economy	3
			66-16	Political Economy	3

*Not given in 1909-10.

CHEMICAL ENGINEERING

The course in chemical engineering covers a period of four years, and leads to the degree of Bachelor of Science in Chemical Engineering.

The subjects in this course have been arranged to give the training in mathematics, physics, chemistry, and mechanical and electrical engineering that will assist the graduates of the department in solving the mechanical, electrical and chemical problems that present themselves when chemistry is applied in practical ways. Subjects intended for general training, the greater part of the pure mathematics, and the less technical engineering subjects have purposely been introduced early in the course. This arrangement allows much time for the study of subjects in chemistry and advanced engineering in the last two years. The mathematical, physical, and general engineering subjects, as well as subjects that are intended for general culture, correspond, for the most part, to those of the course in mechanical and electrical engineering.

In chemistry the subjects are numerous enough to train the student thoroughly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the different branches of chemical analysis, and to make him familiar with many of the practical applications of chemistry. The chemical and engineering subjects are taught, so far as it is possible, in the laboratories, and excursions are made from time to time to plants where technical chemical operations are performed.

Young men who graduate from the course in chemical engineering find employment in constructing and operating plants where chemistry is applied commercially, such as gas-works, dye-works, bleacheries, paper and pulp mills, acid and alkali manufactories.

CHEMICAL ENGINEERING

FRESHMAN YEAR—alike for all courses.

SOPHOMORE YEAR

	First Term			Second Term	
21-7	Drawing	2	21-11	Mechanism	2
29-4	Mathematics	3	25-5	Mechanic Arts	2
31-2	Physics	3	29-5	Mathematics	3
31-4	Physical Laboratory	2	31-3	Physics	3
35-1	General Chemistry	3	31-4	Physical Laboratory	2
41-1	Surveying	2	35-1	General Chemistry	3
	Physical Training	½		Physical Training	½
	Electives			*Electives*	
11-	English		11-	English	
13-	French	3	13-	French	3
	German	3		German	3
17-1	Spanish	3	17-1	Spanish	3
			41-2	Surveying	2

JUNIOR YEAR

	First Term			Second Term	
31-5	Electricity and Magnetism	3	35-3	Qualitative Analysis	2
35-2	Qualitative Analysis	2	35-4	Quantitative Analysis	3
35-4	Quantitative Analysis	3	35-10	Organic Chemistry	4
35-10	Organic Chemistry	4	45-2	Applied Mechanics	3
45-1	Applied Mechanics	3	61-3	Dynamo-Electric Machinery	3
45-12	Applied Mechanics Laboratory	1			
	Electives			*Electives*	
11-	English		11-	English	
17-1	Spanish	3	17-1	Spanish	3
21-12	Mechanism	2		Mathematics	
25-7	Mechanic Arts	2	47-1	Roofs and Bridges	3
	Mathematics		47-5	Structural Design	2
41-62	Contracts	2			

SENIOR YEAR

	First Term			Second Term	
35-5	Quantitative Analysis	3	35-5	Quantitative Analysis	3
35-9	Gas Analysis	1	35-7	Fire Assay	2
35-15	Applied Chemistry	2	35-8	Metallurgy	2
51-1	Steam Engine	3	35-15	Applied Chemistry	2
64-1	Mineralogy	3	35-99	Thesis	3-5
81-1	Political Economy	3			
	Electives			*Electives*	
11-	English			Mathematics	
25-7	Machine Shop	2	35-11	Theoretical and Advanced Inorganic Chemistry	3
	Mathematics		41-45	Hydraulic Engineering	3
35-11	Theoretical and Advanced Inorganic Chemistry	3	47-2	Theory of Structures	3
41-41	Sanitary Engineering	3	47-5	Structural Design	2
45-3	Structural Mechanics	3	51-21	Mechanical Engineering Laboratory	2
54-	Geology	3	54-	Geology	3

TABULAR PROGRAM, FIRST HALF-YEAR

The suffixed *a*, *b*, *c*, *d*, signify divisions

MONDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR	81-1	41-95 51-95 61-7*a*	41-14 61-7*a*	45-3 61-7*a*	35-5 51-22 61-7*b*
JUNIOR	35-10 45-1*a* 51-1*b*	11-3*b* 45-1*b* 51-1*a*	17-1 25-7*b*	11-3*a* 25-7*b* 41-62	35-4 45-12*a* 41-11*b*
SOPH	31-4*a* 41-1*b*	11-3*b* 31-4*a* 41-1*b*	13-3 17-1 31-4*a* 41-1*b*	11-3*a*	21-7*b* 41-1*c*
FRESH	29-2*d* 21-1*b*	13-1 15-1 21-1*b*	21-1*b*	29-2*b* 29-2*c*	21-1*a* 25-1*c*

WEDNESDAY

SENIOR	81-1	61-7*a*	35-15 41-14 61-7*a*	45-3 61-7*a*	35-5 61-21
JUNIOR	35-10 45-1*a* 51-1*b*	45-1*b* 51-1*a*	17-1 25-7*b*	45-9 25-7*b*	21-12 45-12*b*
SOPH	31-4*a* 41-1*b*	31-4*a* 41-1*b*	13-3 17-1 31-4*a* 41-1*b*	35-1*a*,*b*	35-1*b* 41-1*c*
FRESH	29-2*d* 25-1*b*	13-1 15-1 25-1*b*	25-1*b*	29-2*b* 29-2*c*	21-1*a* 25-1*c*

FRIDAY

SENIOR	81-1	41-95 51-95 61-21	35-15 41-14 61-21	45-3 61-21	35-5 51-22 61-7*b*
JUNIOR	35-10 45-1*a* 51-1*b*	11-3*b* 45-1*b* 51-1*a*	11-3*a* 17-1 25-7*b* 41-62	45-9 25-7*b*	35-4 45-12*c*
SOPH		11-3*b*	11-3*a* 13-3 17-1	35-1*a*,*b*	35-1*a* 21-7*b*
FRESH	29-2*d* 25-1*b*	13-1 15-1 25-1*b*	25-1*b*	29-2*b* 29-2*c*	21-1*a*

TABULAR PROGRAM, FIRST HALF-YEAR

The suffixed *a*, *b*, *c*, *d*, signify divisions

TUESDAY

	8:45	9:45	10:45	11:45	2 to 5
Senior	35-11 41-41 51-7	47-6 61-5	47-6 51-5	47-6 51-5 61-11	21-22 35-11 41-31
Junior	31-5*a* 31-5*b*	25-7*a* 31-6*a* 35-2*b* 41-11*a*	25-7*a* 31-6*a* 35-2*b* 41-11*a*	25-7*a* 31-6*a* 35-2*b* 41-11*a*	35-10 31-6*b* 35-2*a*
Soph	15-3 21-7*a*	21-7*a* 29-4*c*	31-2*a* 31-2*b*	29-4*a* 29-4*b*	31-4*b* 41-1*a*
Fresh	13-1*b* 15-2 29-1*a*	11-1*c* 13-1 29-1*d*	13-2*a* 29-1*b* 29-1*c*	11-1*a*	21-1*b* 25-1*a*

THURSDAY

Senior	35-11 41-41 51-7	61-5 47-6	51-5 47-6	61-11 51-5 47-6	21-22 41-31
Junior	31-5*a* 31-5*b*	25-7*a* 31-6*a* 35-2*b* 41-11*a*	25-7*a* 31-6*a* 35-2*b* 41-11*a*	25-7*a* 31-6*a* 35-2*b* 41-11*a*	31-6*b* 35-2*a* 45-12*d*
Soph	15-3 21-7*a*	21-7*a* 29-4*c*	31-2*a* 31-2*b*	29-4*a* 29-4*b*	31-4*b* 41-1*a*
Fresh	13-2*b* 15-2 29-1*a*	13-1 29-1*d*	13-2*a* 29-1*b* 29-1*c*	11-1*b*	21-1*b* 25-1*a*

SATURDAY

Senior	41-41 51-7	61-5		61-11	
Junior	31-5*a* 31-5*b*	11-7 35-4 41-11*b*	21-12 35-4 41-11*b*	35-4 41-11*b*	
Soph	15-3 21-7*a*	11-7 21-7*a* 29-4*c*	31-2*a* 31-2*b*	29-4*a* 29-4*b*	
Fresh	13-2*b* 15-2 29-1*a*	29-1*d*	13-2*a* 29-1*b* 29-1*c*	11-1*a*,*b*,*c*	

TABULAR PROGRAM, SECOND HALF-YEAR

The suffixed *a*, *b*, *c*, *d*, signify divisions

MONDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR	41-45*a* 51-9 61-95	41-45*b*	41-17	61-15	35-5 47-9 51-23 61-7*b*
JUNIOR	35-10 45-2*a*	45-2*b* 51-3	17-1	47-1	21-21*a* 35-4 41-43
SOPH	31-4*a* 41-2*b*	31-4*a* 41-2*b*	13-4 17-1 31-4*a* 41-2*b*	25-5*a*,*b*	25-5*b* 41-2*c*
FRESH	29-3*a* 29-3*b*	13-1 22-1 21-5*a*	29-3*c* 29-3*d* 21-5*b*	21-5*c* 21-5*d*	21-1*b*

WEDNESDAY

SENIOR	35-15 41-45*a* 51-9 61-95	41-45*b*	35-8 41-17	61-15	35-5 47-9 61-7*b*
JUNIOR	35-10 45-2*a*	45-2*b* 51-3	11-8 17-1	47-1	35-10 41-21 51-21
SOPH	31-4*a* 41-2*b*	31-4*a* 41-2*b*	13-4 17-1 31-4*a* 41-2*b*	35-1*a*,*b*	25-5*a* 35-1*b*
FRESH	29-3*a* 29-3*b*	13-1 22-1 21-5*a*	29-3*c* 29-3*d* 21-5*b*	21-5*c* 21-5*d*	21-1*a*

FRIDAY

SENIOR	35-15 41-45*a* 51-9 61-95	41-45*b*	35-8 41-17	61-15	35-5 61-7*a*
JUNIOR	35-10 45-2*a*	45-2*b* 51-3	11-8 17-1	47-1	21-21*a* 35-4 41-43
SOPH	21-11	21-11	13-4 17-1	35-1*a*,*b*	35-1*a* 41-2*c*
FRESH	29-3*a* 29-3*b*	13-1 22-1 21-5*a*	29-3*c* 29-3*d* 21-5*b*	21-5*c* 21-5*d*	21-1*a* 25-1*b*

TABULAR PROGRAM, SECOND HALF-YEAR

The suffixed *a*, *b*, *c*, *d* signify divisions

TUESDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR	35-11 47-2 61-17 66-5	66-16	61-6		35-11 61-7*a*
JUNIOR	61-3	41-13 61-1*b*	41-21 61-1*b*	61-1*b*	35-3 47-5 51-21
SOPH	11-4 22-3 29-5*a* 29-5*b*	11-6 29-5*c*	31-3*a* 31-3*b*	21-11	31-4*b* 41-2*a*
FRESH	11-2*a* 13-2*b*	31-1	11-2*b* 13-2*a* 15-2		25-1*c*

THURSDAY

SENIOR	35-11 47-2 61-17 66-5	66-16	61-6		51-23
JUNIOR	61-3	21-21*b* 25-9 41-13 61-1*a*	21-21*b* 25-9 41-51 61-1*a*	21-21*b* 25-9 41-51 61-1*a*	35-3 47-5 61-1*b*
SOPH	11-4 22-3 29-5*a* 29-5*b*	11-6 29-5*c*	31-3*a* 31-3*b*	21-11	31-4*b* 41-2*a*
FRESH	13-2*b*	31-1	11-2*c* 13-2*a* 15-2	13-1	21-1*b* 25-1*a*

SATURDAY

SENIOR	47-2 61-17 66-5	66-16	61-6		
JUNIOR	61-3	21-21*b* 25-9 35-4 41-13 61-1*a*	21-21*b* 25-9 35-4 41-51 61-1*a*	21-21*b* 25-9 35-4 41-51 61-1*a*	
SOPH	22-3 29-5*a* 29-5*b*	11-6 29-5*c*	31-3*a* 31-3*b*		
FRESH	13-2*b*	31-1	13-2*a* 15-2	11-2*a*,*b*,*c*	

Index to Subjects

No.	Term Hours	Subject
		11 ENGLISH
11-1	3	English (First Term)
11-2	3	English (Second Term)
11-3	2	Argumentation
11-4	2	Narration
11-6	2	General English Literature
11-7	2	Advanced English Literature
11-8	2	Technical Exposition
11-9	2	Technical Theses
		13 FRENCH
13-1	*6	French
13-2	*6	French
13-3	3	French
13-4	3	French
13-6	3	French
		15 GERMAN
22-1	*6	German
15-2	*6	German
22-3	*6	German
		17 SPANISH
17-1	*6	Spanish
		21 DRAWING
21-1	†5	Drawing
21-5	3	Descriptive Geometry
21-7	2	Drawing
21-11	2	Mechanism, Elementary
21-12	2	Mechanism, Advanced
21-21	2	Machine Design, Elementary
21-22	2	Machine Design, Advanced
		25 MECHANIC ARTS
25-1	§3	Pattern Making
25-5	2	Forging
25-7	2	Hand and Machine Tools
25-9	2	Machine Tools
		29 MATHEMATICS
29-1	3	Trigonometry and Algebra
29-2	3	Analytical Geometry and Algebra
29-3	3	Elementary Calculus
29-4	3	Intermediate Calculus
29-5	3	Advanced Calculus
		31 PHYSICS
31-1	3	Mechanics and Sound
31-2	3	Electricity and Magnetism, and Light
31-3	3	Mechanics and Heat
31-4	‡4	Physical Laboratory
31-5	3	Electricity and Magnetism
31-6	2	Electrical Laboratory

No.	Term Hours	Subject
		35 CHEMISTRY
35-1	*6	General Inorganic Chemistry
35-2	2	Qualitative Analysis
35-3	2	Qualitative Analysis, Advanced
35-4	*6	Quantitative Analysis
35-5	*6	Quantitative Analysis, Technical
35-7	2	Fire Assay
35-8	2	Metallurgy of Iron and Steel
35-9	1	Technical Gas Analysis
35-10	‖8	Organic Chemistry
35-11	*6	Theoretical and Advanced Inorganic Chemistry
35-15	‡4	Applied Chemistry
35-99	3-5	Chemical Engineering Thesis
		41 CIVIL ENGINEERING
41-1	2	Surveying
41-2	2	Surveying
41-11	2	Railroad Surveying
41-13	3	Railroad Engineering
41-14	3	Railroad Engineering
41-17	3	Railroad Engineering, Economics
41-21	2	Highways and Cements
41-31	2	Geodesy
41-41	3	Sanitary Engineering
41-43	2	Hydraulic Measurements
41-45	3	Hydraulic Engineering
41-51	2	Fire Protection Engineering
41-62	2	Contracts
41-95	2	Civil Engineering Topics
41-99	3-5	Civil Engineering Thesis
		45 APPLIED MECHANICS
45-1	3	Applied Mechanics
45-2	3	Applied Mechanics
45-3	3	Structural Mechanics
45-9	2	Mechanics Problems
45-12	1	Applied Mechanics Laboratory
		47 STRUCTURAL ENGINEERING
47-1	3	Roofs and Bridges
47-2	3	Theory of Structures
47-5	2	Structural Design, Elementary
47-6	2	Structural Design, Advanced
47-9	2	Bridge Design
47-99	3-5	Structural Engineering Thesis
		51 MECHANICAL ENGINEERING
51-1	3	Steam Engine
51-3	3	Thermodynamics
51-5	2	Valve Gears
51-7	3	Engine Design
51-9	3	Steam Engineering
51-21	2	Mechanical Engineering Laboratory
51-22	2	Mechanical Engineering Laboratory

*Two terms, three term hours each.
†Two terms; first term, three term hours; second term, two term hours.
‡Two terms, two term hours each. ‖Two terms, four term hours each.
§Two terms; first term, two term hours; second term, one term hour.

51 Mechanical Engineering (Continued)

51-23	2	Mechanical Engineering Laboratory
51-95	-	Mechanical Engineering Topics
51-99	3-5	Mechanical Engineering Thesis

54 GEOLOGY

61 ELECTRICAL ENGINEERING

61-1	2	Electrical Laboratory
61-3	3	Dynamo-Electric Machinery
61-5	3	Alternating Current Machinery
61-6	3	Alternating Current Machinery
61-7	‡4	Dynamo Laboratory
61-11	3	Alternating Currents
61-15	3	Electrical Engineering
61-17	3	Telephone and Telegraph
61-21	3	Dynamo Design, D. C.
61-22	3	Dynamo Design, A. C.
61-95	3	Electrical Topics
61-99	3-5	Electrical Engineering Thesis

64 MINERALOGY

81 POLITICAL ECONOMY

81-1	3	Elements of Economics
66-5	3	Money, Credit, and Banking
66-16	3	Modern Labor Problems

‡ Two terms, two term hours each.

Departments of Instruction

11 ENGLISH

The aim of the department of English is, first, to teach the student to think accurately and to give adequate written and spoken expression to his own experience; second, to broaden his outlook.

In addition to the class work, papers in other subjects will also be examined by the instructors in English, as a test of the student's ability to express himself correctly and clearly; and theses, as far as possible, will be subject to criticism by the instructors in English before they are finally accepted by the department for which they are written.

11-1 **English.** A study of the elemental forms of literary and scientific writing: description, exposition, directions, criticism, argument, and narration, with the ultimate aim of helping the student to think for himself. Reading of illustrative literature. *Three periods a week: one lecture, one recitation, and one ten-minute conference.*

First term. Three term hours.

PROFESSOR EARLE, MR. SAVAGE, and MR. SEAVEY

11-2 **English.** A study of actual problems in literary expression. Reading in general science and literature under the guidance of weekly lectures. *Three periods a week: one lecture; one recitation, and one ten-minute conference. Preparation, 11-1.*

Second term. Three term hours.

PROFESSOR EARLE, MR. SAVAGE, and MR. SEAVEY

11-3 **English.** Argumentative composition adapted to meet the special needs of engineers. *Three periods a week: two recitations and one ten-minute conference. Preparation, 11-2.*

First term. Two term hours. MR. SAVAGE and MR. SEAVEY

11-4 **English.** An advanced subject in general composition, including the writing of daily themes and short stories. *Three periods a week: two recitations, and one ten-minute conference. Preparation, 11-2.*

Second term. Two term hours. MR. SAVAGE and MR. SEAVEY

11-6 **English.** A brief survey of English literature and history, aiming to broaden the student's appreciation of what he may get from books, and to suggest ways in which the past throws light on the problems of the present. *Four periods a week: three lectures and one ten-minute conference. Preparation, 11-2.*

Second term. Two term hours. MR. SAVAGE and MR. SEAVEY

11-7 **English.** Advanced English literature. A study of some author, period, or type. The definite work to be carried on will be outlined by the instructor in charge each June for the following term. *Two periods a week: one recitation and one twenty-minute conference. Preparation, 11-6.*

First term. Two term hours. MR. SAVAGE and MR. SEAVEY

11-8 **English.** A detailed study of the most important problems of technical writing. *Four periods a week: two recitations and two ten-minute conferences. Preparation, 11-2.*

Second term. Two term hours. PROFESSOR EARLE

11-9 **English.** An advanced subject in technical composition. No class meetings; each student writes papers from ten to fifty pages in length under the individual direction of the instructor. The subjects are taken, as far as possible, from technical work previously done by the student outside of college, or from special research. *One thirty-minute conference a week. Preparation, 11-8.*

First term. Two term hours. PROFESSOR EARLE

MODERN LANGUAGES

Students who have fulfilled the entrance requirement in foreign language are required to pursue in the Freshman year a course in a modern language under the following conditions:

Those receiving credit in an ancient language only will enter French 13-1, and will be required to take French 13-2 in the Sophomore year.

Those receiving elementary credit in French or German only will continue that language during the Freshman year.

Those receiving credit for advanced French or German only may continue the language offered for one year, or begin the other, but in the latter case they will be required to continue it during the Sophomore year.

Those receiving elementary credit in both French and German may continue either language during the Freshman year.

Those receiving advanced credit in one language, and ele-

mentary credit in the other, may continue either for one year. They are recommended to select that in which elementary credit only is received. Those who receive advanced credit in French, and elementary credit in German, may, with the consent of the department, take Spanish in the Freshman year.

Those receiving elementary and advanced credit in both languages may take either for one year, or each for a half-year; or Spanish, with the consent of the department.

Extra Credit. *Any student receiving credits in language not needed for entrance, to the extent of two units, may apply, not later than the end of the Sophomore year, for an additional credit toward his degree of three term hours, which will be granted if his work has been satisfactory to the department.

*Any student receiving credits in language not needed for entrance, to the extent of six units (or four, consisting of Advanced French and Advanced German), may apply, not later than the end of the Sophomore year, for an additional credit toward his degree of six term hours, which will be granted if his work has been satisfactory to the department. These students may be excused from language work at mid-year, when in the judgment of the promotions committee the adjustment of their program makes it desirable; they will then receive three hours credit for the work of the first term, and six hours additional credit.

*Any student receiving credits in language not needed for entrance, to the extent of eight units, including one advanced modern language, may apply, not later than the end of the Sophomore year, for an additional credit toward his degree of nine term hours, which will be granted if his work has been satisfactory to the department. These students may be excused from language at mid-year, when in the judgment of the promotions committee the adjustment of their program makes it desirable; they will then receive three hours credit for the work of the first term, and nine hours additional credit.

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* Principals and prospective students are informed that college credit for work done in the secondary school is given only upon examination, or after the student has satisfactorily continued the subject in College.

But in no case shall a student count more than eighteen term hours in foreign language towards his degree.

Any student of other national language than English who may be a candidate for admission, and who is able to speak French, German, Spanish, Italian, or Portuguese, will be given credit for this ability as an equivalent for the entrance requirement in Modern Language.

He may also offer it as a substitute for the regular modern language requirement for the degree of S.B. in Engineering, under the following conditions:

(1) That he shall have attained the ability to express himself fluently, and with a sufficient degree of accuracy, in English; that he shall have passed the required subjects in English, and one elective in English composition.

(2) That he shall have passed a special examination in the language for which he is to receive credit.

13 FRENCH

The aim of the work in French is the acquisition of a knowledge of the language not only for its educational value in general but for its bearing on the student's mother tongue. The scientific reading is chosen, as far as possible, for its direct application to technical subjects which are being studied at the same time. Care and accuracy in translation are emphasized. Although no extensive attempt is made to give the student a ready speaking knowledge of the language, he is trained to understand it when spoken. Careful attention is paid to pronunciation, and to the acquisition of a vocabulary of every-day expressions and idioms which will enable him, in case of foreign residence, to acquire rapidly a correct and fluent command of the spoken tongue. Students are encouraged to do outside reading for their own pleasure, in addition to the classroom requirements. The college Library contains a large assortment of representative works suited for this purpose.

13-1 **French.** Elementary course. The essentials of grammar, with composition; Grandgent's Grammar; a French Reader; reading of short

21-5 **Descriptive Geometry** is taught by recitations and the solution of a great number of problems. The problems are designed to correlate theory and practice. *Three recitations a week. Simultaneous with 21-1. Second term. Three term hours.*

ASSISTANT PROFESSOR ASHLEY AND MR. SVENSEN

21-7 **Drawing.** A study of the technique of graphic expression and its application in giving complete and accurate information to the constructor. Detailed and assembly drawings are made from freehand sketches and other data, but nothing in the nature of a copy is permitted. The work is conducted according to the methods of progressive draftsmen, the greatest emphasis being laid on completeness and accuracy in the use of graphic language. *Two periods a week of two hours each. Preparation, 21-1. First term. Two term hours.*

PROFESSOR ANTHONY AND MR. SVENSEN

21-11 **Mechanism.** An introductory course, conducted mainly by graphical methods, and dealing with the fundamental laws governing the velocity ratio and paths of mechanical movements and their application to velocity diagrams, simple types of gearing, and other modes of transmission. *Two recitations a week, or two periods of two hours drafting. Preparation, 21-1. Simultaneous with 31-3. Second term. Two term hours.*

PROFESSOR ANTHONY and MR. SVENSEN

21-12 **Mechanism.** Advanced course, mathematical and graphical, dealing with the application of the principles of mechanism to various types of gearing and valve gears, together with the study of the more important application to modern machine tool and appliance. *Two recitations a week, or two periods of two hours drafting. Preparation, 21-11. First term. Two term hours.*

PROFESSOR ANTHONY

21-21 **Machine Design.** The solution of simple problems in design, involving only the elementary principles of applied mechanics but requiring careful thought and close observation. A systematic training of the judgment is made of first importance. *Preparation, 21-7, 21-11, and 45-1. Two periods a week; three hours each. Second term. Two term hours.*

PROFESSOR ANTHONY AND MR. SVENSEN

21-22 **Machine Design.** A continuation of 21-21 but necessitating a more complete consideration of the design of one representative type of machine. *Preparation, 21-21 and 45-2. Two periods a week; three hours each. First term. Two term hours.*

PROFESSOR ANTHONY AND MR. SVENSEN

25 MECHANIC ARTS

Work in the shops is designed to give a practical knowledge of mechanical processes and of materials of construction. Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer.

The work in this department maintains a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shops from drawings prepared in the drafting-room. It is required of all engineering students during the Freshman year.

25-1 **Pattern Making.** Practice is given in the use of bench woodworking tools and the wood-turning lathe for the construction of simple patterns from working drawings. The principles and methods of foundry practice are taught at the same time. The course for the second term includes the construction of more complicated patterns and core-boxes, and the consideration of special problems involving the relation of pattern making to general engineering work. Visits are made to the shops of manufacturing plants. *First term, two periods a week; three hours each. Second term, one three-hour period.*

First and second terms. Three term hours.

ASSISTANT PROFESSOR STEWART AND MR. ADAMS

25-5 **Forging.** A short course in bending, drawing, upsetting, forming, and welding iron, and tool dressing, together with text-book work and recitations on the production of iron and steel. A study of their uses and value in engineering work. Visits are made to steel-producing plants. *Two periods a week; one three-hour period and one lecture.*

Second term. Two term hours.

ASSISTANT PROFESSOR STEWART AND MR. ADAMS

25-7 **Hand and Machine Tools.** A short course is given in work at the vise, followed by lathe work, which includes straight and taper turning and fitting, chucking, boring, reaming, and thread cutting; also drilling and planing, shaper and milling-machine work. *Two periods a week; three hours each.*

First term. Two term hours. ASSISTANT PROFESSOR STEWART

25-9 **Machine Tools.** Further instruction in lathe work on steel and brass, the use of the boring mill, hardening and grinding, and the elements of tool making. The study of shop problems by visits to manufacturing

plants. Instruction is also given in the use of tools and fittings in piping. *Two periods a week; three hours each.*

Second term. Two term hours. ASSISTANT PROFESSOR STEWART

29 MATHEMATICS

The instruction in mathematics is arranged so that fundamental principles of trigonometry, analytics, and calculus may come as early as possible in the course, the more advanced parts of each subject being introduced later. A review of algebra runs through the first year in appropriate connection with topics in the other subjects. The prescribed work continues to the end of the Sophomore year, double time being given to mathematics in the first term of the Freshman year. Seniors and Juniors may elect higher courses in the College of Letters.

29-1 Trigonometry and Algebra. Methods of calculation; solution of triangles; use of logarithms and the slide rule; reduction of expressions involving radicals and trigonometric functions; combinations and probability. *Simultaneous with 29-2. Three hours a week.*

First term. Three term hours.

PROFESSOR RANSOM AND MR. DILLINGHAM

29-2 Analytical Geometry and Algebra. Graphical representation; simultaneous equations; quadratics; variation; the straight line, circle, ellipse, and hyperbola; locus problems. *Simultaneous with 29-1. Three hours a week.*

First term. Three term hours.

PROFESSOR RANSOM AND MR. DILLINGHAM

29-3 Elementary Calculus. Differentiation and integration of algebraic functions; problems in tangents, rates, maxima and minima, areas, etc.; logarithmic and trigonometric functions. *Three hours a week. Preparation, 29-1 and 29-2.*

Second term. Three term hours.

PROFESSOR RANSOM AND MR. DILLINGHAM

29-4 Intermediate Calculus. Drill in differentiation and integration; applications; trigonometric identities and equations. *Three hours a week. Preparation, 29-3.*

First term. Three term hours.

PROFESSOR RANSOM AND MR. DILLINGHAM

29-5 Advanced Calculus. Expansions; indeterminate forms; multiple

integration; spherical trigonometry; introduction to differential equations. *Three hours a week. Preparation, 29-4.*

Second term. Three term hours.

PROFESSOR RANSOM AND MR. DILLINGHAM

31 PHYSICS

This science is presented, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, from which all the various phenomena are deducible. In each branch there are frequent returns to these first principles.

In the laboratory, students are given a syllabus of the work for a guide. This syllabus is supplemented by Glazebrook's Physical Optics; Kaulrausch's Measurements; Stewart and Gee's Practical Physics, vols. 1 and 2; Glazebrook and Shaw's Practical Physics; Nichol's Laboratory Manual, vols. 1 and 2; and Watson's Practical Physics. In addition to the experimental and note-book work, many problems are solved.

31-1 **Mechanics and Sound.** This is introductory to all other subjects offered by the department. *Three periods a week, lectures and recitations.*

Second term. Three term hours.

PROFESSOR H. G. CHASE AND MR. MORLEY

31-2 **Electricity and Magnetism, and Light.** *Three periods a week, lectures and recitations.*

First term. Three term hours.

PROFESSOR H. G. CHASE AND MR. MORLEY

31-3 **Mechanics and Heat.** *Three periods a week.*

Second term. Three term hours.

PROFESSOR H. G. CHASE AND MR. MORLEY

31-4 **Physical Laboratory.** *Two periods a week; three hours each.*

First and second terms. Four term hours.

PROFESSOR H. G. CHASE AND MR. MORLEY

31-5 **Electricity and Magnetism.** Elementary mathematical treatment. *Three periods a week.*

First term. Three term hours.

PROFESSOR H. G. CHASE AND PROFESSOR HOOPER

31-6 **Electrical Laboratory.** Measurements. *Two periods a week; three hours each. Preparation 31-5, or simultaneous with 31-5.*

First term. Two term hours. MR. ROLLINS AND MR. MUNRO

35 CHEMISTRY

35-1 General Inorganic Chemistry. An introductory course in theoretical and descriptive inorganic chemistry, with a thorough consideration of the simplest carbon compounds and principal technical processes. *Three periods a week, two lectures, one three hour laboratory period with conferences. First and second terms. Six term hours.*

PROFESSOR DURKEE, ASSISTANT PROFESSOR COBB, AND ASSISTANTS

35-2 Qualitative Analysis for the detection of the metals, a course which includes the experimental development of schemes for the division of the metals into groups, the separation and detection of the metals in each group, — a study of all the chemical changes and analytical details, together with the correct analysis of six known solutions and thirteen unknown. *Two periods a week, three hours each, laboratory work and conference. Six lectures.*

First term. Two term hours. PROFESSOR DURKEE AND ASSISTANTS

35-3 Qualitative Analysis, Advanced, dealing with methods to effect solution of solids, the detection of mineral and common organic acids, the complete analysis of inorganic solids, including mixtures of salts, minerals, alloys, and slags. Three known and thirteen unknown are required, and thorough study of the chemical changes and conditions involved in the analyses. *Two periods a week, three hours each, laboratory work and conference.*

Second term. Two term hours. PROFESSOR DURKEE AND ASSISTANT

35-4 Quantitative Analysis. Theory and practice of gravimetric and volumetric analysis, including the determination of chlorine by the ordinary and Gooch crucible methods, iron and sulphur in furous ammonium sulphate, silica in a silicate, phosphorus in a phosphate, complete analysis of dolomite, and brass, preparation of strictly half-normal sodium hydroxide and hydro-chloric acid solutions, the volumetric analyses of soda ash and oxalic acid, the analysis of iron ore by the dichromate and permanganate methods, determination of chromium in chromite, of antimony by the iodine method, and silver by the sulpho-cyanate method. *Three periods a week, three hours each, laboratory work and conference.*

First and second terms. Six term hours. PROFESSOR DURKEE

35-5 Quantitative Analysis. Technical. Work varied somewhat to meet the needs of individual students. Course ordinarily comprises proximate analysis of coal, nitrogen in coal, Kjeldahl's method, complete analysis of boiler scale, mineral and sanitary analysis of water, determination of copper in ores by iodine and cyanide methods, of zinc by ferro-cyanide method, complete analysis of Babbitt metal, determination of lead in ores,

and manganese, sulphur, phosphorus, silicon and carbon in iron and steel. *Three periods a week, three hours each, laboratory work and conference.*

First and second terms. Six term hours. PROFESSOR DURKEE

35-7 **Fire Assay.** A course which deals with the theory and practice of sampling and assaying gold and silver ores. *Two periods a week, three hours each, laboratory work and conference.*

Second term. Two term hours. PROFESSOR DURKEE

35-8 **Metallurgy of Iron and Steel.** Considered largely from the chemical side, and includes the study of ores, fluxes, fuels, furnaces, and the other mechanical devices used in the commercial production of pig iron, wrought iron, and steel, together with the solution theory of iron and steel, heat treatment of steel, and production of malleable cast iron. *Two periods a week, one hour each. Lectures and recitations.*

Second term. Two term hours. PROFESSOR DURKEE

35-9 **Technical Gas Analysis,** by the Orsat, Elliot, and Hempel systems. *One period a week, of three hours.*

First term. One term hour. PROFESSOR DURKEE AND ASSISTANT

35-10 **Organic Chemistry.** This course consists of lectures, recitations, and laboratory work. It is intended to familiarize the student with the typical compounds of carbon and their more important derivatives. The work in the laboratory includes the preparation of certain of the more important substances referred to in the lectures; the identification of certain classes of compounds; and organic analysis. *Four periods a week, three lectures, one three-hour laboratory period.*

First and second terms. Eight term hours.

ASSISTANT PROFESSOR COBB

35-11 **Theoretical and Advanced Inorganic Chemistry.** The subject matter of this course consists largely of the principles usually included under the head of Physical Chemistry. A part of the year is set aside for the consideration of inorganic material which is not included in the elementary course. The work in the laboratory includes both physical chemical measurements and the preparation of inorganic compounds. *Three periods a week, two lectures, one two-hour laboratory period.*

First and second terms. Six term hours. ASSISTANT PROFESSOR COBB

35-15 **Applied Chemistry.** A course dealing with the most important applications of inorganic and organic chemistry to manufacturing purposes, such as the production of sulphuric acid, soda, illuminating gas, and sugar. *Two periods a week. Lectures, visits to plants, text-book work, and recitations.*

First and second terms. Four term hours. PROFESSOR DURKEE

35-99 **Chemical Engineering Thesis.** The development of a Chemical Engineering problem by extended personal research.

Second term. Three to five term hours.

PROFESSOR DURKEE AND ASSISTANT PROFESSOR COBB

41 CIVIL ENGINEERING

*41-1 **Surveying.** Field practice with transit and level, training in the use of equipment, and duties of a survey party. Neat and systematic field notes are required. Area computation, problems in dividing land, resurveys, and plotting are treated under office work. The field work occupies about three-fifths of the time. Practical and business-like methods are required throughout the course. *Two three-hour periods a week.*

First term. Two term hours.

ASSISTANT PROFESSOR TUCKER

*41-2 **Surveying.** A course in general surveying methods, covering the elements of topographical surveying and drawing, practice with stadia, plane table, and triangulation transit, and making adjustments of transit and level. The planimeter and level trier are analyzed and applied. Volumes, extensive practice in contours, and the figuring and staking of a few simple Railroad curves, lead to Railroad Surveying. *Preparation, 41-1. Two periods a week; three hours each.*

First term. Two term hours.

ASSISTANT PROFESSOR TUCKER AND MR. CONNER

41-11 **Railroad Surveying.** Field practice in locating a short line of railroad through rough country near the college. Surveys for the improvement or reconstruction of existing railroads. Office work on plans, profiles, estimates and reports. *Two periods a week; three hours each. Preparation, 41-2.*

First term. Two term hours. MR. CONNER

41-13 **Railroad Engineering.** Lectures and recitations on the construction of steam and electric railroads; the railroad engineering features of track elevation, subways, tunnels, roundhouses, repair shops, water and coaling stations. *Three periods a week; one hour each. Preparation, 41-11.*

Second term. Three term hours. MR. CONNER

41-14 **Railroad Engineering.** Lectures and recitations concerning maintenance of railroads; discussions on track materials and track work, frogs and switches, yard layouts, maintenance of way standards, equipment and tools. *Three periods a week; one hour each. Preparation, 41-13.*

First term. Three term hours. MR. CONNER

*Courses 41-1 and 41-2 are offered as a Summer Course in Surveying of three weeks in length, to be given at the college about June 14.

41-17 **Railroad Engineering Economics.** Lectures and recitations on the economic principles of railroad location and operations; discussions on grade and alignment revisions, double-tracking and general improvements. *Three periods a week; one hour each. Preparation, 41-14.*

Second term. Three term hours. MR. CONNER

41-21 **Highways and Cements.** The underlying principles of road and street location, and typical pavement constructions are discussed, with modern problems of maintenance. Tests of wearing and cementing qualities of traps, abrasion or "rattler" test of paving bricks, and the common laboratory tests of Portland cements are made, and the proportions of concrete studied. *Two periods a week; two hours each.*

Second term. Two term hours. ASSISTANT PROFESSOR TUCKER

41-31 **Geodesy.** The determination of a true meridian, accurate measurement of a base line, of angles in a triangulation system, and the adjustment of observations by the method of least squares. *Two periods a week; three hours each. Preparation, 41-2.*

First term. Two term hours.

PROFESSOR SANBORN AND MR. CONNER

41-41 **Sanitary Engineering.** The elements of sanitary science, water and its purification, and the disposal of sewage and garbage. *Three recitations a week.*

First term. Three term hours. PROFESSOR SANBORN

41-43 **Hydraulic Measurements.** A laboratory and field course in hydraulics and hydrography; experiments with contracted and submerged weirs, piezometers, Pitot tubes, mercury columns, standard nozzles, turbine and disc meters, duplex pump, and gaging of river or canal by rod floats and current meter. *Two three-hour periods a week.*

Second term. Two term hours. PROFESSOR SANBORN

41-45 **Hydraulic Engineering.** A course dealing with water-shed areas, canals, penstocks, water-powers, wheels, and turbines. *Three recitations a week.*

Second term. Three term hours. PROFESSOR SANBORN

41-51 **Fire Protection Engineering** considers water-works, systems of piping, elevated tanks and stand pipes, fire streams, hydrants, pumps, automatic sprinklers, steam fire-engines, joisted and slow-burning construction of buildings, general order and neatness of industrial plants as affecting fire hazards. *Two periods a week; one recitation and one three-hour period.*

Second term. Two term hours. PROFESSOR SANBORN

41-62 **Contracts.** The writing and interpretation of construction contracts and specifications, and deed descriptions; the contractual

basis of the law of Partnership, Corporations, Sales, and Negotiable Paper; the duties and responsibilities of the engineer as an agent, business man, and independent contractor are discussed in lectures and recitations. *Two recitations a week.*

First term. Two term hours. ASSISTANT PROFESSOR TUCKER

41-95 Civil Engineering Topics. Each student is required to present three topics from the Proceedings of the American Society of Civil Engineers. The presentation must be in the form of a lecture, brief reference notes being permitted. Each student is required to participate in class discussion. *Two periods a week; one hour each — 10 minutes for review, 25 for speaker, 15 for class discussion. Preparation, Junior Civil Engineering courses.*

First term. Two term hours. PROFESSOR SANBORN

41-99 Civil Engineering Thesis. A single topic is developed by extended research, design, or experimentation.

Second term. Three to five term hours. PROFESSOR SANBORN

45 APPLIED MECHANICS

45-1 Applied Mechanics. This is a consideration of the principles of the strength of materials, relating to beams, columns and shafts, and is essentially a mathematical treatment. In the development, the following subjects are treated in detail: centre of gravity; moment of inertia; the laws of elasticity; coefficients of elasticity; relations between stress and strain; pure stresses, as tension, compression, and shear; elastic limits, working stresses and ultimate resistances of wrought iron, steel, timber, and concrete; reactions and bending moments of beams; bending moment and shear diagrams; theory of flexure. It includes also the design and construction of steel and timber beams, columns, and shafts, and the design of plate girders. *Three periods a week; recitations and lectures with numerous problems. Preparation, 29-5 and 31-4.*

First term. Three term hours.

PROFESSOR ROCKWELL AND MR. SMITH

45-2 Applied Mechanics. A continuation of the subjects treated in 45-1. In addition, an introduction to the methods of graphic statics, and a brief treatment of the principles of mechanics involved in reinforced concrete construction are given. *Three periods a week; recitations and lectures with problems. Preparation, 45-1.*

Second term. Three term hours.

PROFESSOR ROCKWELL AND MR. SMITH

45-3 Structural Mechanics. A treatment of the mechanics of masonry structures, including their design and construction. The subjects treated are retaining walls, abutments, masonry arches, chimneys, dams, and

masonry foundations. A large part of the course is devoted to design in reinforced concrete structures. *Three periods a week; recitations and lectures with problems and designs. Preparation, 45-2.*

First term. Three term hours. PROFESSOR ROCKWELL

45-9 **Mechanics-Problems.** Mechanics-problems adapted from actual examples as found in engineering practice. *Two recitations a week. Preparation, 31-3.*

First term. Two term hours. PROFESSOR SANBORN

45-12 **Applied Mechanics Laboratory.** This course deals with the resistance of the materials of construction, and comprises the testing of cast iron, steel, wrought iron, timber, and concrete in tension, compression, and shear, and the determination of the elastic limits, ultimate strengths, and coefficients of elasticity of these materials. *One period a week; three hours. Simultaneous with 45-1.*

First term. One term hour. PROFESSOR ROCKWELL AND MR. SMITH

47 STRUCTURAL ENGINEERING

47-1 **Roofs and Bridges.** A study of the different methods, algebraic and graphical, for the determination of stresses in simple framed structures. A large part of the course is devoted to the stresses in bridge trusses in use at the present time, such as the Pratt, Warren, and Baltimore trusses with parallel chords, and modifications of these, with curved chords. Some attention is also given to forms that have been used in the past, as the Whipple and lattice trusses. The fundamental principles of influence lines are developed and applied to the simpler forms of trusses. *Three periods a week; lectures and recitations, with problems. Preparation, 45-1. Simultaneous with 45-2.*

Second term. Three term hours. PROFESSOR ROCKWELL

47-2 **Theory of Structures.** An advanced course in the theory of structures, both steel and masonry. It deals with draw-bridges, cantilevers, suspension bridges, and the elastic arch. The method of influence lines is used to a considerable extent in addition to the usual algebraic methods. *Three periods a week; lectures aud recitations, with problems. Preparation, 47-1 and 45-3.*

Second term. Three term hours. PROFESSOR ROCKWELL

47-5 **Structural Design.** An introductory course in the design of framed structures. It consists of the complete designs of a steel roof truss and a plate girder bridge, with the necessary shop drawings. *Two periods a week; three hours each. Simultaneous with 45-2.*

Second term. Two term hours.

PROFESSOR ROCKWELL AND MR. SMITH

47-6 Structural Design. The design of a steel mill building and some structure of reinforced concrete; the details being worked out as completely as time permits. *Two periods a week; three hours each. Preparation, 47-5. Simultaneous with 45-3.*

First term. Two term hours. PROFESSOR ROCKWELL AND MR. SMITH

47-9 Bridge Design. A course in the design of riveted and pin connected steel bridges, with details of the distinctive features of each, as arge compression and tension members; theory of latticing, large riveted connections, pin connections, splices, wind bracing, portal framing, and floor beam connections. *Two periods a week; three hours each. Preparation, 47-1 and 47-6.*

Second term. Two term hours. PROFESSOR ROCKWELL AND MR. SMITH

47-99 Structural Engineering Thesis. A single topic is developed by extended research, design, or experimentation.

Second term. Three to five term hours. PROFESSOR ROCKWELL

51 MECHANICAL ENGINEERING

Mechanism. See 21-11 and 21-12 in the Department of Drawing.

Machine Design. See 21-21 and 21-22 in the Department of Drawing.

51-1 Steam Engine. This course deals with the generation of steam and gas for power purposes. It comprises a study of modern types of boilers and their auxiliary apparatus, and of methods for the production of power gas. A brief consideration is given to the use of steam and gas in the different types of steam engines and gas engines. *Three periods a week; lecture or recitation. Preparation, 21-11 and 29-3.*

First term. Three term hours. PROFESSOR C. H. CHASE

51-3 Thermodynamics. This course is devoted to the thermodynamics of the steam engine and other heat engines, and includes a study of the properties of steam and gas as used in steam engines, turbines, and gas engines; also the working fluids and saturated vapors used in refrigeration. The object of the course is to teach the application of the principles to actual conditions. *Three recitations a week. Preparation, 29-5 and 51-1.*

Second term. Three term hours. PROFESSOR C. H. CHASE

51-5 Valve Gears. A study of the principal types of valve gears, including the plain slide valve, swinging eccentrics, link motions, radial gears, double valve gears, and releasing mechanisms. *Two periods a week; one hour recitation and three hours drafting. Preparation, 51-1 and 21-11.*

First term. Two term hours. PROFESSOR C. H. CHASE

51-7 Engine Design. The design of steam and gas engines, involving the strength and proportion of parts, the stresses set up, and the condition

for static and dynamic equilibrium. *Three periods a week; two recitations and three hours drafting. Preparation, 21-21, 51-3, and simultaneous with 51-5.*

First term. Three term hours. PROFESSOR C. H. CHASE

51-9 **Steam Engineering.** A study of steam and gas power plant equipment. Boiler construction and design, including calculations for one type of boiler. Pumps, heaters, condensers; arrangement of piping; chimneys, mechanical draft; mechanical stoking, coal handling. Power gas generators; suction and pressure types. *Three hours a week; lecture and recitation. Preparation, 51-7.*

Second term. Three term hours. PROFESSOR C. H. CHASE

51-21 **Mechanical Engineering Laboratory.** Efficiency of simple machines; screw threads; hoists; simple, duplex, triplex; rope and belt friction; transmission of power by belts. The results of all laboratory work are submitted in the form of carefully written reports. The determination of the clearance of engines; valve setting on plain slide valve, riding cutoff, and Corliss engines. Gage testing; the adjustment and use of indicators; testing indicator springs; the use of several types of steam calorimeters; injector test; flow of steam through orifices. *Two periods a week; three hours each. Preparation, 21-12 and 51-1. Simultaneous with 51-3.*

Second term. Two term hours.

PROFESSOR C. H. CHASE AND MR. SVENSEN

51-22 **Mechanical Engineering Laboratory.** Tests on riding cutoff, shaft governor, and Corliss engines, a four-cycle gas engine, and a two-cycle gasolene engine; tests on a 16 x 8½ x 9 duplex steam pump, measurement of water by weir, nozzle, and meter; analysis of flue and producer gases; condenser tests. *Two periods a week; three hours each. Preparation, 51-21.*

First term. Two term hours. PROFESSOR C. H. CHASE

51-23 **Mechanical Engineering Laboratory.** Tests on a horizontal return fire tubular boiler; determination of the velocity of steam through ports; coefficients of friction with different oils and friction on different types of bearings; test on a 35-inch exhaust fan; test at 2000 K.W. power station, and other tests which may be arranged. *Two periods a week; three hours each. Preparation, 51-22.*

Second term. Two term hours. PROFESSOR C. H. CHASE

51-95 **Mechanical Engineering Topics.** A course of lectures by students. Each member of the course chooses three topics from the proceedings of the American Society of Mechanical Engineers. The subjects are presented to the class in the form of lectures, followed by dis-

cussion and criticism. *Two periods a week. Preparation, Junior Mechanical Engineering courses.*

First term. Two term hours. PROFESSOR ANTHONY

51-99. Mechanical Engineering Thesis. An essay based on extended personal research, design, or experimentation.

Second term. Three to five term hours.

PROFESSOR ANTHONY AND PROFESSOR C. H. CHASE

54 GEOLOGY

The subjects offered in the department of Geology do not form a sequence, but are intended to give different classes of students that knowledge of geology and mineralogy which they need. In all cases, they aim to include some real grasp upon the structure and history of the earth, the problems presented in the study thereof, and the modes of attack upon those problems. The first subject (Geology 1) is introductory, open to all, and intended primarily for those who have had no previous work in science. The other subjects are such that certain preliminary studies, stated in connection with each, must be taken before entering upon them.

The illustrative collections in these lines are ample. Besides exhibition specimens in the Barnum Museum, there is a working collection illustrating mineralogy, lithology, and dynamical and historical geology. These are supplemented with maps, diagrams, photographs, and lantern slides. The work in each subject consists of lectures and recitations, together with work in the laboratory and in the field. Excursions are taken to neighboring points that illustrate certain phenomena. Tufts College is well placed for field work and for the study of various natural processes.

54-1* Physical Geology and Geography Lectures and recitations; laboratory and field work.

Second term. Three term hours. PROFESSOR LANE

54-2 General and Economic Geology. Lectures and recitations; laboratory and field work. *Six hours a week.*

First and second terms. Six term hours. PROFESSOR LANE

* Not given in 1909-10.

54-3* **Mathematical Problems presented to Geologists.** Conferences and critical reading of selected papers and original work.

First and second terms. Six term hours. PROFESSOR LANE

54-4* **Field Geology.** *One recitation and six hours field work a week. Preparation, 54-2.*

First part of first and last part of second term. Three term hours.

PROFESSOR LANE

61 ELECTRICAL ENGINEERING

The aim of the work in this department is to fit men to deal intelligently with electrical problems likely to be presented to the practical engineer. With this in view, principles rather than details are emphasized, and these principles are developed and fixed by the free use of concrete problems as well as by laboratory experiments and tests.

61-1 **Electrical Laboratory.** An introduction to electrical testing, including the calibration of instruments, the study of arc and incandescent lamps, the storage battery, and the magnetic properties of iron. In the latter part of the term some of the more elementary dynamo tests are undertaken. *Two periods a week; three hours each. Preparation, 31-6 and simultaneous with 61-3.*

Second term. Two term hours. MR. ROLLINS AND MR. MUNRO

61-3 **Dynamo Electric Machinery.** An elementary course dealing with the fundamental principles of dynamo electric machinery and their application in the construction and operation of direct current generators and motors. Some attention is also given to storage batteries, arc and incandescent lamps, and systems of direct-current distribution. *Three recitations a week Preparation, 31-5.*

Second term. Three term hours. PROFESSOR HOOPER

61-5 **Alternating Current Machinery.** A course treating of the theory, construction, and operation of synchronous alternators. *Three recitations a week. Preparation, 61-3.*

First term. Three term hours. PROFESSOR HOOPER

61-6 **Alternating Current Machinery.** A continuation of 61-5, treating of the synchronous convertor, transformer, induction motor, and commutating motors. *Three recitations a week. Preparation, 61-5.*

Second term. Three term hours. PROFESSOR HOOPER

* Not given in 1909-10.

61-7 Dynamo Laboratory. Advanced, direct, and alternating dynamo testing. *Two periods a week; three hours each. Preparation, 61-1 and 61-3. Simultaneous with 61-5.*

First and second terms. Four term hours.

MR. ROLLINS AND MR. MUNRO

61-11 Alternating Currents. The mathematical development of equations and formulas from elementary electrical principles, and the physical interpretation of the equations and formulas thus developed. *Three periods a week. Preparation, 31-5 and 29-10.*

First term. Three term hours. PROFESSOR HOOPER

61-15 Electrical Engineering. A course dealing with the production, transmission, distribution, and utilization of electrical power. *Three recitations a week, with solution of assigned problems. Preparation, 61-5.*

Second term. Three term hours. PROFESSOR HOOPER

61-17 Telephone and Telegraph. A course on principles and operation of telephone and telegraph systems. *Three periods a week. Preparation, 31-5 and 31-6.*

Second term. Three term hours. MR. ROLLINS

61-21 Dynamo Design, D.C. A course on the practical design of direct current machinery. *Two periods a week; three hours each. Preparation, 61-3.*

First term. Three term hours. MR. MUNRO

61-22 Dynamo Design, A.C. A course on the practical design of alternating current apparatus. *Three periods a week. Preparation, 61-3 and 61-21.*

Second term. Three term hours.

PROFESSOR HOOPER AND MR. MUNRO

61-95 Electrical Topics. Lectures by students on electrical subjects, followed by discussion and criticism. *Three periods a week. Preparation, 61-5.*

Second term. Three term hours. PROFESSOR HOOPER

61-99 Thesis. An essay based on some construction, design, or investigation.

Second term. Three to five term hours.

PROFESSOR HOOPER, MR. ROLLINS, AND MR. MUNRO

64 MINERALOGY

See introductory statement under 54 Geology.

64-1 Mineralogy and Lithology. *Two recitations and four hours laboratory work a week. Preparation, 35-1.*

First term. Three term hours. PROFESSOR LANE

64-1 Mineralogy alone may be of use to civil and structural engineers,

but those who are looking to mining or chemical engineering should take both 64-1 and 64-2, if either.

64-2 Crystallography and Descriptive Mineralogy. *Two lectures and four hours laboratory work a week. Preparation, 64-1.*

Second term. Three term hours. PROFESSOR LANE

81 POLITICAL ECONOMY

81-1 Elements of Economics. Designed especially for students of engineering, aims at a systematic and comprehensive study of the elements of economics, and comprises work in some of the more important problems of modern industrial society. Exposition of the fundamental principles of the production, distribution, exchange, and consumption of wealth. Bullock's Elements of Economics is used as a guide. *Three recitations a week.*

First term. Three term hours. PROFESSOR METCALF

66-5 Money, Credit, and Banking. An historical course, with special reference to the financial experience of the United States. Leading topics are Hamilton's financial system; protection and revenue tariffs; the bank question; the fiscal policy of the Civil War; resumption of specie payments; the national banking system; State and local taxation; silver legislation and the panic of 1893; government loans; present currency problems. Dewey's financial History of the United States is used as a guide. *Three recitations a week. Preparation, 81-1.*

Second term. Three term hours. PROFESSOR METCALF

66-16 Modern Labor Problems. This subject deals mainly with the social and economic problems arising from the relations of employers and their laborers. The chief topics will be the growth, methods, and aims of modern associations of wage earners; methods of conciliation and arbitration; strike and factory legislation; employers' liability and recent compensation acts; compulsory publicity; provident institutions and friendly societies. Each member of the class will be expected to make a report upon a labor union. *Lectures and recitations. Three recitations a week. Preparation, 81-1.*

Second term. Three term hours. PROFESSOR METCALF

A. B. AND B. S. IN FIVE YEARS

Provision has been made, for such students as are prepared to enter upon the course leading to A.B. (see pages 37 to 56), to secure the degrees of Bachelor of Arts and Bachelor of Science in five years.

In order to obtain both degrees at the end of five years, Freshmen should enter with one unit of credit in Solid Geometry, under the Secondary Group (pages 37, 51).

The work in College would then be distributed as follows:—

Freshman Program

First half-year: —

	TERM HOURS
Mathematics 29-1	3
Mathematics 29-2	3
English 1	3
Two languages	6
Physical Training	

Second half-year: —

	TERM HOURS
Mathematics 29-3	3
Physics 31-1	3
English 2	3
Two languages	6

Sophomore Program

First half-year:—

	TERM HOURS
A third language	3
Drawing 21-1	3
Physics 31-2	3
Mathematics 29-4	3
History 1	3
Physical Training	

Second half-year:—

	TERM HOURS
A third language	3
Drawing 21-1	2
Physics 31-3	3
Mathematics 29-5	3
History 1	3

The Junior year will be the same as the Sophomore year of the Engineering School, substituting Philosophy 3, with 4 or 5, and Mechanic Arts 25-1, and Descriptive Geometry 21-5, for Mathematics 29-4 and 5, and Physics 31-2 and 3.

The last two years will be the same as the Junior and Senior years in the course in Engineering.

After the Freshman year, the program limitation, and the tuition fees, will be those of the Engineering School.

For the explanation of the subject numbers above, consult the announcement of the Engineering School.

Further information concerning the Engineering School will be found in a special pamphlet, to be obtained by addressing Dean Anthony, Tufts College, Mass.

THE GRADUATE SCHOOL

Faculty of the Graduate School

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT

J. STERLING KINGSLEY, Sc.D., DEAN
Professor of Biology

PHILIP M. HAYDEN, A.B., SECRETARY

CHARLES E. FAY, A.M., LITT.D.
Wade Professor of Modern Languages

WILLIAM L. HOOPER, A.M., PH.D.
Professor of Electrical Engineering

ARTHUR E. AUSTIN, A.B., M.D.
Professor of Medical Chemistry

DAVID L. MAULSBY, A.M.
Professor of English Literature

FRANK W. DURKEE, A.M.
Professor of Chemistry

GEORGE VAN NESS DEARBORN, A.M., PH.D., M.D.
Professor of Physiology

WILLIAM K. DENISON, A.M.
Professor of the Latin Language and Literature

LAWRENCE B. EVANS, PH.D.
Professor of History

HENRY C. METCALF, PH.D.
Jackson Professor of Political Science

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

FRANK G. WREN, A.M.
Walker Professor of Mathematics

STANDING COMMITTEES OF THE GRADUATE SCHOOL

EXECUTIVE: Professor Hooper, *Chairman*; Professors Denison and Metcalf.

REQUIREMENTS FOR DEGREES: Professor Evans, *Chairman*; Professors Wade and Maulsby.

The Graduate School

INSTRUCTION

Graduate instruction is given by members of the several existing faculties. The advanced elective work offered to undergraduates in any department of the School of Liberal Arts is open to graduate students, and will count for the degree of Master of Arts, on condition that it be not counted for any other degree.* Additional courses still more advanced may be arranged with the instructor in whose department the work is to be done.

DEGREES

The degrees offered are Master of Arts and Master of Science. Departments at present open to candidates for the degree of Master of Arts are:—

English,	Mathematics,
Modern Languages,	Chemistry,
Ancient Languages,	Physiological Chemistry,
History and Public Law,	Biology,
Political Science,	Physiology,
	Electricity.

The degree of Master of Science is offered in Biology, in Chemistry, and in Engineering.

The Degree of Master of Arts will be conferred upon graduates of Tufts College who have received the degree of Bachelor of Arts, or upon graduates of other colleges whose course of study has been equivalent to that required at Tufts College for the degree of Bachelor of Arts, upon the following conditions:—

1. They shall have completed an approved course of advanced study, including the equivalent of at least thirty term hours, in one or at the most two departments. If two departments are chosen they should be allied, and should occupy the relation of major and subsidiary department.

* Students doing work in undergraduate classes are required to take the appointed final examination with these classes.

2. This course shall be pursued during a residence of not less than one year. In the case of graduates of Tufts College, the condition of residence may be waived by special permission, but the degree cannot then be taken with less than two years of graduate study.

3. The candidate shall prepare a thesis in the form prescribed by the regulations, which may be ascertained at the Secretary's office, and shall pass a satisfactory examination under the supervision of a board of three examiners, appointed by the Graduate Faculty at its May meeting. The thesis must be presented at least one month before Commencement.

4. No subject counted for the first degree will be counted for the second degree.

5. Students taking the degree at the end of a four years' course of study must have complied with the requirement as to standing governing those who receive the degree of A.B. at the end of three years; that is, an average standing of Grade B, or higher, must have been attained on the entire work of the course.

6. Candidates for this degree must make a written application to the Graduate Faculty before October 1 of the college year in which the degree is to be conferred, and if the degree is not taken after one year of study they must also give a second notice three months before receiving the degree. This application shall indicate the department or departments in which it is proposed to pursue work for a degree.

Graduates of Tufts College who have taken the degree of Bachelor of Philosophy, or graduates of other colleges holding a degree of similiar grade, must complete the requirement for the degree of Bachelor of Arts before they can be entered as students in courses leading to the degree of Master of Arts.

THE DEGREE OF MASTER OF SCIENCE will be conferred upon Bachelors of Science who shall satisfactorily pursue advanced professional study at Tufts College for one year, under the conditions required of candidates for the degree of Master of Arts; or upon Bachelors of Science of Tufts College who shall pursue graduate work *in absentia* for at least two years, or who shall present suitable evidence of three years of professional work, one year of which must be in a position of responsibility, in which case a certain amount of professional study will be assumed. A thesis based upon this study will be required.

DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF MASTER OF ARTS

ENGLISH.—It is assumed that candidates for the degree of Master of Arts in English will have already laid a good foundation in English composition and the history of English literature. The amount of work expected is roughly indicated by that required of a major student in English at this College. When not anticipated in undergraduate work, the subjects numbered 7*, 10, 14 to 19, 21, 23, 25, 26, 27, and 28, may be counted towards the Master's degree, provided that the work done distinctly surpasses in quality that required of undergraduates. On the other hand, a part of the work or the entire work for the advanced degree may consist of a special course of study, undertaken under the direction of the department. Such special work must be of creative or investigative order. It may take the form of discussion of some question in literary history or literary criticism. It may consist of the intensive study of an author or a period. The use of German and French is sometimes necessary. A final oral examination is customary.

MODERN LANGUAGES.—The undergraduate subjects at present offered in Modern Languages enable the candidate for the degree of Bachelor of Arts who specializes in this department to cover the work formerly required for the Master's degree. For those who have not taken the more advanced subjects, the department offers a full graduate course leading to the degree of Master of Arts. The work is performed in existing undergraduate classes. To enter upon this course, the candidate must have completed the equivalent of six of the Modern Language subjects, including 1 and 3 † in both German and French. Of elementary subjects only Italian may be taken, by such as have had the equivalent of two years of French. Graduate students whose special work is being performed in other departments are admitted to such classes in German and French, beyond subject 1, as their proficiency will warrant.

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*See "Departments of Instruction," pages 67 and 68.

†See "Departments of Instruction," pages 67 to 72.

ANCIENT LANGUAGES. — Candidates for the degree of Master of Arts in Greek or Latin must have completed, for Greek, subjects 1, 2, 3, and 4 or 5; for Latin, subjects 1, 2, 3 or 4, and 5, or equivalents.* It is desirable that candidates for this degree in either of the ancient languages present the other as a minor department. Exceptional cases will be treated in accordance with the varying circumstances. Greek 4, 5, 7, 8, and 9, Latin 3, 4, 6, 8, 9, 10, and Classical Archæology 1, 2, 3, 4, 5, and 6, so far as these have not been anticipated as undergraduate work, may be counted towards the Master's degree. Graduate students will be expected to do work of an advanced character, either in classes with undergraduates or on special lines of investigation assigned by the instructors. The required thesis, on an approved topic, must embody the results of the investigation of some author or period, or of some philological or archæological subject. A reading knowledge of French and German is indispensable.

HISTORY AND PUBLIC LAW.—Before beginning graduate work in History and Public Law every student must have completed History 1 and 2, and Public Law 1 or 2, or their equivalent.† The advanced subjects enumerated in the catalogue, in so far as they are suited to the needs of the candidate, may be offered for the higher degrees, but it is expected that much of the candidate's work will consist of special work pursued under the direction of the department.

For the degree of Master of Arts, a working knowledge of French is essential. A similar knowledge of German is desirable, and in some cases may be necessary. In addition to the subjects required for the degree candidates will be expected to do something in the way of an independent investigation of a definite subject, the result to be embodied in a thesis.

A final oral examination is customary.

POLITICAL SCIENCE.—The degree of Master of Arts in Political Science is conferred on graduates of Tufts College who

* See "Departments of Instruction," pages 72 to 76.

† See "Departments of Instruction," pages 80 to 83.

pursue successfully one year of resident graduate study. Bachelors of Arts of other colleges must satisfy the department that they are qualified by previous training to enter upon the desired course of study, and show the results of a year's resident graduate work with high credit. A good reading knowledge of French and German is desirable, and may in certain lines of work be necessary. Before receiving the degree all candidates are expected to sustain a final oral examination, and give evidence by a thesis of their ability to do work of the investigative order. In addition to the regular advanced work offered by the department, special subjects giving opportunity for original investigation will be outlined for candidates wishing to pursue them.

MATHEMATICS.— Graduate students in Mathematics must have acquired a working knowledge of the calculus, and may offer as part of their work for the Master's degree any of the subjects given by the department except the first six, but subjects 7, 9, and 10, or their equivalents, must be included.* Candidates will hold themselves in readiness to be examined at the end of their studies upon any topics treated in the first six subjects, as well as upon work offered for the degree.

CHEMISTRY.—The requirements for beginning graduate work in Chemistry are the completion of subjects 1, 2, and 3, or their equivalent.† Subjects 4, 5, 7, 8, 9, 10, 12, and 14 may be counted toward the Master's degree, if they have not been counted as undergraduate work. Examination is required, and a satisfactory thesis.

PHYSIOLOGICAL CHEMISTRY. — The work in Physiological Chemistry requires in preparation a thorough foundation in inorganic and organic chemistry, including qualitative and quantitative analysis; the ability to read scientific French and German readily; and a thorough knowledge of the elements of physics, particularly with reference to the laws of the density of gases and fluids under heat and pressure, as well as such ac-

* See "Departments of Instruction," pages 87 and 88.

† See "Departments of Instruction," pages 90 to 93.

quaintance with optics as will enable one to use intelligently the polariscope, the spectroscope, and the microscope.

The course is one of laboratory work wholly, under the personal advice and assistance of the instructor, and must include one original investigation, to require not less than one half-year, and to be accompanied by a satisfactory thesis upon the results of such research. The subject of this investigation may be taken from the realm of enzymes, metabolism, or hygiene. A rigid examination will also be demanded upon the principles of physiological chemistry.

PHYSIOLOGY.—Before beginning graduate work in Physiology the candidate for the degree of Master of Arts must have had at least a year's training in biology, and, besides, a knowledge of the outlines of anatomy and physiology such as may be obtained from such works as Martin's Human Body, with simple laboratory experiments. A reading knowledge of French and German is desirable, and in some cases may be necessary. The work of the year is largely practical. It involves the completion of the work in physiology required of candidates for the degree of Doctor of Medicine, and, in addition, the investigation of some simple problem which shall serve as the basis of the required thesis.

BIOLOGY.—Before beginning graduate work in Biology the student must have a good knowledge of the elements of vertebrate and invertebrate anatomy and of physiology (subjects 1 to 4 of Tufts College, or their equivalent), and must be able to use French and German.* The work offered for advanced degrees is in the lines of comparative anatomy and of the histology and embryology of animals. Consequently the greatest stress will be laid upon laboratory work, but students may also take the subjects numbered 5, 6, 8, and 9.

For the degree of Master of Arts or Master of Science the student must pass a satisfactory examination in the principles of morphology, and present an acceptable thesis embodying the result of research.

* See "Departments of Instruction," pages 93 to 95.

ELECTRICITY.—As a preparation for graduate work in Electricity the candidate must have a thorough mathematical foundation, including differential equations, and a good knowledge of physics, including elementary electrical tests (Physics 2 and 31-1 to 31-4* of Tufts College, or an equivalent). Unless these requirements be met upon beginning graduate work, it will scarcely be possible to obtain the master's degree in one year.

The graduate work will include the satisfactory completion of subjects 61-3, 61-5, 61-6, 61-7, 61-9, and 61-11,* and the preparation of an acceptable thesis involving original research.

FELLOWSHIPS

THE OLMSTEAD AND MINER FELLOWSHIPS IN NATURAL HISTORY.—In accordance with the spirit of the gift of the late Charles Hyde Olmstead, of Hartford, Conn., the Trustees have established two fellowships in Natural History, to be known respectively as the Olmstead and the Miner Fellowship. The income of these fellowships, amounting to two hundred and fifty dollars annually each, is awarded by the Trustees to graduate students in Natural History, upon recommendation of the Administrative Board. The conditions of the fellowships are as follows:—

(1) The application must be made in writing before May 1, addressed to the President of the College. It must contain evidence of a liberal education, and of ability to profit by the work to be done, as well as testimonials of good character from instructors or others. Any original article, either written or printed, is an aid in ascertaining the attainments of the candidate.

(2) The holder of the fellowship will be expected to devote himself to the prosecution of some special subject, under the direction of the professor in charge of the department of Natural History. He may be called upon for minor services, such as conducting examinations, but he shall not be called upon to teach. He may, however, at his own option, and with the approval of the President, give instruction by lectures or otherwise to persons connected with the College, but not elsewhere.

(3) The payments will be made half in January and half in June; but, in case of resignation or removal from the fellowship, payment will be

* See pages 88 and 149.

made only for the time it is actually held. The holder of the fellowship is not exempt from the payment of tuition.

(4) Residence is a condition of holding either of these fellowships.

The holder of a fellowship may be eligible to a single re-election, but incumbency constitutes no claim to re-appointment.

SCHOLARSHIPS

The Trustees of Tufts College have established eleven scholarships, one in each department offering graduate work. Each scholarship gives free tuition to the incumbent, who is expected to devote himself exclusively to advanced study.

These scholarships are awarded by the Graduate Faculty, on recommendation of the heads of departments concerned, at or before the beginning of the year in which they are to be conferred. Applications must be made to the President on or before May 1 of the preceding year, and will regularly be acted upon at the June meeting of the Graduate Faculty.

TUITION

The tuition fee for the whole course for the degree of Master of Arts, or Master of Science, is *one hundred dollars*, of which *fifty dollars* is payable in advance.

THE CRANE THEOLOGICAL SCHOOL

Faculty of the Crane Theological School*

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT

CHARLES H. LEONARD, A.M., D.D., LL.D., DEAN
Goddard Professor of Homiletics and Pastoral Theology

PHILIP M. HAYDEN, A.B., SECRETARY†

WILLIAM G. TOUSEY, A.M., D.D.
Ryder Professor of Ethics and the Philosophy of Theism

GEORGE T. KNIGHT, A.M., D.D.
Packard Professor of Christian Theology

GEORGE M. HARMON, A.M., D.D.
Professor of Biblical Theology

WARREN S. WOODBRIDGE, A.M., D.D.
Woodbridge Professor of Applied Christianity

EDWIN C. BOLLES, A.M., PHD., D.D., LL.D.
Dickson Professor of English and American History

J. STERLING KINGSLEY, SC.D.
Professor of Biology

ALFRED C. LANE, A.M., PH.D.
Pearson Professor of Geology and Mineralogy

HERBERT E. CUSHMAN, A.M., PHD.
Professor of Philosophy

DAVID L. MAULSBY, A.M.
Professor of English Literature and Oratory

THOMAS WHITTEMORE, A.B.
Professor of English

HENRY C. METCALF, A.B., PH.D.
Jackson Professor of Political Science

* Below the line are printed the names of instructors who, while not members of the Theological Faculty, offer subjects that are open to students of the School.

† *Ex officio*, as Secretary of the Faculty of Arts and Sciences.

LAWRENCE B. EVANS, PH.D.
Professor of History

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

OSCAR MARTIN
Director of the Gymnasium

NON-RESIDENT LECTURERS

HENRY W. RUGG, D.D.
The Missionary Principle and Work

STEPHEN H. ROBLIN, D.D.
The Relation of the Church to the Ills of Mankind

LEVI M. POWERS, D.D.
The Relation of the Ministry to Social Problems

R. PERRY BUSH, D.D.
The Minister among Men

JAMES H. HOLDEN, A.M.
The Minister in his Parish

RICHARD E. SYKES, D.D.
Men's Clubs

GEORGE G. HAMILTON, D.D.
The Evangelical Spirit

FREDERIC W. PERKINS, D.D.
The Interpretation of Life in Terms of Religion

VINCENT E. TOMLINSON, D.D.
The Relation of the Minister to the Sunday School

CHARLES CONKLIN, D.D.
The Relation of the Minister to the Ecclesiastical Organization

JOHN COLEMAN ADAMS, D.D.
The Psychology of Childhood

COMMITTEE ON PROMOTIONS

President Hamilton, *Chairman;* Professor Harmon, Mr. Hayden.

The Crane Theological School

The Theological School is one of the co-ordinate departments of Tufts College. Students of the School are members of the College, enjoying its privileges and subject to its regulations.

COURSES OF STUDY

A course of three years, open to college graduates, leads to the degree of Bachelor of Divinity.

A course of six years leads to the degrees of A.B. and B.D., the requirements for admission being the same as those for candidates for the degree of A.B. (See pages 37 to 56.)

A course of four years leads to the degree of B.D., the requirements for admission being the same as those for candidates for the degree of A.B. (See pages 37 to 56.)

Special courses are arranged for such persons as may be deemed by the Faculty qualified for work in the School.

SYNOPSIS OF THE REQUIREMENTS FOR A.B. AND B.D.

[The unit here used (called the "term hour") is equivalent to one program hour a week for a half-year.]

	Term Hours
Language (Greek, Latin, German, French; each student to take *three*)	18
Science (Mathematics, Physics, and Biology)	18
History (Civil and Religious)	15
Bible	24
Philosophy (Psychology, Logic, Ethics, Systematic Theology, etc.)	24
Sociology (Law, Economics, and Applied Christianity)	15
English (Rhetoric, Literature, Oratory, and Homiletics)	42
Physical Training	2
Electives, amounting to	24
Total term hours	182

SYNOPSIS OF THE FOUR-YEAR COURSE FOR B.D.

[The unit here used (called the "term hour") is equivalent to one program hour a week for a half-year.]

	Term Hours
Bible	30
Philosophy (Logic, Ethics, Theology)	21
English (Rhetoric, Literature, Oratory, Homiletics)	36
History (Civil and Religious)	15
Applied Christianity	6
Pastoral Care	3
Physical Training	2
Free Electives	9
Total	122

For all theological students the major instructor and official adviser on general matters relating to college affairs is the Dean of the Theological School, or some appointed representative from the Theological Faculty.

Departments of Instruction

OLD TESTAMENT

PROFESSOR WOODBRIDGE

The aim is to secure, chiefly through the English version, a working knowledge of the Old Testament, and an appreciative acquaintance with Hebrew thought and life. The course includes a history of the book; a history of the people Israel from whose literature the book was made; a history of the development of the literature; followed by critical and interpretative study. Hebrew is offered as the foundation of a more critical study.

SUBJECTS

1. (History of Religions 1.*) Life and literature of the Hebrew people from the beginnings to the Greek period. *Mon., Wed., Fri., 4.00.*

PROFESSOR WOODBRIDGE

* See page 174.

[2. (History of Religions 2.*) A study of Jewish life in contact with Hellenistic culture and Roman provincial administration. (*Three hours for a half-year, to be arranged.*) PROFESSOR HARMON]

3. (Hebrew 1.†) The Hebrew Language: the elements of grammar. Translation of portions of Genesis, of the book of Ruth, and other selections. *Tu., Th., Sat., 11.45.* PROFESSOR WOODBRIDGE

4. (Hebrew 2.†) Hebrew Language: syntax, critical readings from the historical books, from the prophets, and the Psalms. *Three hours a week.* PROFESSOR WOODBRIDGE

5. Principles of criticism; critical analysis of Genesis; the pre-exilian prophets; Isaiah, with special reference to authorship and date; the development of Hebrew law; the prophets of the exile; post-exilian literature. *Tu., Th., Sat., 8.45.* PROFESSOR WOODBRIDGE

NEW TESTAMENT

PROFESSOR HARMON

1. New Testament History (History of Religions 3*). This subject covers the history of the Jews during the lifetime of Jesus, including their relations to the Roman government, and their political, social, and religious institutions and customs. It also includes the origin, extension, and development of the Christian Church until the destruction of Jerusalem. Incidentally these results form the historical background for the study of the New Testament literature.

2. New Testament Criticism. This subject covers the investigation of the origin and character of the Gospels and the apostolic literature, the aim being to acquire an understanding of the general conditions essential to the correct interpretation of the New Testament writings.

3. New Testament Exegesis. The work consists of lectures on methods of interpretation, followed by an examination of the Synoptic Gospels in the Greek, with the object of acquiring a knowledge of the ministry and teachings of Jesus. It includes also a study of the Pauline Epistles and the Johannine literature.

* See page 174.
† See page 77.

SUBJECTS

1. History of the Beginnings of Christianity. A study of the times of Jesus, of the rise and growth of the apostolic church, and of the origin of its literature. *Mon., Wed., Fri., 3.00.* (F) PROFESSOR HARMON

2. New Testament Criticism. *Mon., Wed., Fri., 9.45.* (S) PROFESSOR HARMON

3. New Testament Exegesis and Theology. *Mon., Wed., Fri., 11.45.* PROFESSOR HARMON

4. New Testament Greek. *Three hours a week for a year, to be arranged.* PROFESSOR HARMON

HISTORY OF RELIGIONS

PROFESSORS WOODBRIDGE, HARMON, AND KNIGHT

The department of History of Religions deals with a special phase of the general subject of history, showing the growth of superstition and religion, and their relation to civilization — including politics, social life, philosophy, literature, art, and personal character.

SUBJECTS

1. (Old Testament 1.*) Life and literature of the Hebrew people, from the beginnings to the Greek period. *Mon., Wed., Fri., 4.00.* PROFESSOR WOODBRIDGE

[2. (Old Testament 2.†) A study of Jewish contact with Hellenistic culture and Roman provincial administration. *Three hours for a half year, to be arranged.* PROFESSOR HARMON]

3. (New Testament 1.‡) History of the beginnings of Christianity. A study of the time of Jesus, of the rise and growth of the apostolic church, and of its literature. *Mon., Wed., Fri., 3.00.* (F) PROFESSOR HARMON

4. Non-Christian Religions. Comparative studies of religion and civilization in ancient Egypt, Chaldea, Greece, Rome, and Germany, and in ancient and modern India, China, Japan, and Turkey. *Tu., Th., Sat. 8.45.* (F) PROFESSOR KNIGHT

5. History of the Church, including the sects, from the apostles to the present time. *Tu., Th., Sat., 9.45.* PROFESSOR KNIGHT

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* See page 172.
† See page 173.
‡ See page 173.

ETHICS

PROFESSOR TOUSEY

Analytical and inductive study of the moral experience is followed by an attempt to develop a correct moral theory. Attention is given to the more important questions in ethical philosophy. Such doctrines as sentimentalism, hedonism, utilitarianism, intuitionalism, naturalism, and determinism are studied, not merely in a critical spirit, but with a view to discover the special aspects of truth for which they stand.

A course is also offered in the history of ethical speculation, and of the development of moral customs and ideas. Finally, the bearing of ethical theory on the leading problems of the individual and the social life is discussed, particular attention being given to such subjects as duties, rights, education, charities, State aid, temperance, socialism. Some attention is also given to casuistry. The course concludes with a review of what is distinctively known as Christian ethics. The instruction throughout is shaped to bring into clearness the fundamental principles of morality, and to show their importance in the conduct of the personal life and in the moral guidance of others.

SUBJECTS

1. (Philosophy 6.*) Theoretical Ethics. The moral nature; freedom of the will; moral judgments; theories of the standard; the moral ideal; Christian ethics; ethics and theism. *Mon., Wed., Fri., 10.45.* (F)
PROFESSOR TOUSEY

2. (Philosophy 7.†) Practical Ethics. Moral theory as bearing on the individual and social life; special consideration of duties, rights, temperance; charities; moral pathology; penology. *Mon., Wed., Fri., 10.45.* (S)
PROFESSOR TOUSEY

3. (Philosopy 8.†) Ethics, Historical and Critical. History of ethical speculation; development of moral customs and ideals. *Three hours, to be arranged.* (F)
PROFESSOR TOUSEY

PHILOSOPHY OF THEISM

PROFESSOR TOUSEY

At the outset some attempt is made to articulate the Final

* See page 78.
† See page 79.

Problem, and to indicate the various answers that have been proposed. The different modes of the theistic argument are then reviewed, their grounds scrutinized, and their logical value considered. This imposes a patient hearing and painstaking judgment of objections which have found expression in earlier and later times. In treating of the office of reason in matters of belief, and of the limits of the understanding, both mysticism and agnosticism come in for notice; and in discussing the attributes of God, and His relation to the universe, pantheism and pessimism receive somewhat special attention. The general method here, as in Ethics, is to employ treatises available as texts, and to supplement them by means of annotations, lectures, and parallel readings, the aim being to lead the student to the sources of evidence, and to establish a vigilant and correct method of inquiry. Much importance is attached to the dialectic of the class-room as securing a ready command of resources, and as a corrective of ill-defined notions and hasty inference. An effort is made to treat subjects in the light of contemporary criticism and the latest developments of science; and, by testing and chastening conclusions, to provide against fanaticism on the one hand and frivolity of judgment on the other.

SUBJECT

1. (Philosophy 15.*) The final problem; limits of the intelligence; Final Cause in nature; evidences of a moral order; modes of theistic argument; intuitivism; anti-theistic theories. *Mon., Wed., Fri., 11.45.*
PROFESSOR TOUSEY

THEOLOGY

PROFESSOR KNIGHT

The purpose is, primarily, to assist the student to think independently on theological subjects, and to abide in the consequences. In pursuing this purpose, attempt is made to co-ordinate the products of biblical theology, religious history, natural theology, ethics, and, indeed, of all the proper sources of material, and thus to produce a scientific theology. It is believed

* See page 79.

that such a system will deserve and receive the student's confidence, and will enlist his energies.

The method includes several stages:—

1. The history of important doctrines and creeds, as a general introduction.

2. *a.* Special history of the topic in hand, with analysis and classification of opinions and theories according to their logical relations.

b. The collection of the facts, so far as given in the present state of knowledge, and the criticism of the theories on the basis of the facts.

c. The organization of the results into a scientific product.

d. Illustrative applications to practical problems,—ecclesiastical, political, social, and personal.

SUBJECTS

1. Historical Introduction. *Mon., Wed., Fri., 4.00.* (S)
PROFESSOR KNIGHT

2. (Philosophy 16.*) Theology; anthropology; soteriology; eschatology; critical study of modern doctrines. *Tu., Th., Sat., 11.45.*
PROFESSOR KNIGHT

APPLIED CHRISTIANITY

PROFESSOR WOODBRIDGE

The topic of study is the ministry of the church in the world. The purpose is to secure the efficiency of pastor and church in the promotion of the Christian life. The course covers one year, and is a series of lectures, supplemented by investigation. The lectures deal, in order, with the foundation principles of the ministry of the church, the proper scope and limitations of its work under these principles, efficient organization and best instrumentalities, and the specific duties which present-day life and problems make imperative. The course in investigation requires of the student a special study of some given community in its practical attempts at solving its own

* See page 80.

problems. He visits the institutions of religion and philanthropy, personally observes their work, and makes written report of the same for discussion in the class-room.

SUBJECTS

1. The Efficient Ministry: fundamental principles; instrumentalities and organization; individual and social duties; practical methods. *Hours to be arranged.* PROFESSOR WOODBRIDGE

HOMILETICS AND PASTORAL CARE

PROFESSOR LEONARD

The inclusive subject in this study is the Work of the Minister.

A. The Work of the Minister as a Leader in Thought, with special reference to preaching, consists of studies in constructive homiletics; the varying conception of preaching as determined by the person and the time; helps in the preparation of sermons from the study of history, literature, and character; the preparation and delivery of sermons; practice in extempore discourse; the cultivation of power in preaching; the study of representative preachers.

The above outlines the work of Homiletics 1 (Eng. 27*) and Homiletics 2.

An elective is offered in the History of Preaching, with reference to the relation of the pulpit to the life and the thought of the time. This study is made the basis of the needs of the modern pulpit.

An elective is offered on the preacher's use of the Bible: as history; as biography; as parabolic teaching; as poetry; as epistolary discourse. This study is designed for students who have taken biblical literature and interpretation.

B. The Work of the Minister as a Leader in Worship: as a permanent state of mind and heart; as a concrete expression of the person and the inner life; as a function of Christian society. Particular attention is given to the essential elements of public worship: the lesson; the principles of belief, or

* See page 69.

"confession with the mouth"; the prayer; the offering; the sermon; the elements of worship in preaching; the sacraments.

An elective is offered on the principles which underlie all acts of worship; in what way the subjective and objective principles may be co-ordinated. This work includes a careful study of liturgies, and all available forms of worship in their affirmative, conservative, and educative uses. This study is open to advanced students in Church History.

C. The Work of the Minister as a Leader in Social Service. This part of the study has particular reference to pastoral care, and includes the minister's relation to a single parish, and to a single community. Careful study is invited to the intellectual, spiritual, and social qualifications of the minister; modern methods of church-work; the conduct in the special offices of religion, as in baptism, confirmation, the Lord's Supper, the marriage service, the burial of the dead. The aim in this work is the practical preparation of the minister for his sacred duties.

An elective is offered in Religious Pedagogy, consisting of formal instruction in the class-room, and lectures on the principles of education; methods in religious teaching; graded instruction in Sunday-schools; nature study for religious training; the psychology of religion. Particular attention is given to the training of teachers. Students who take this subject come under the instruction of several professors and non-resident lecturers.

An elective is offered in Parish Administration. The provision of this study of the minister as an administrator, and as a student of system, is a forward step in recognition of the fact that the ministers of to-day must be trained in business methods.

In special cases the work of the school will be so arranged that students may become assistants, for three months at a time, to pastors designated by the Faculty, or by the head of the departments. The requirement is that this work shall be a study of conditions and methods in the individual parish and community, a report on the work in detail, and a thesis based upon the facts in the case.

SUBJECTS

A

1. (English 27.*) Inductive Homiletics, *Hours to be arranged.*
PROFESSOR HARMON

2. Constructive Homiletics *Tu., Th., Sat., 9.45.* PROFESSOR HARMON

[3. The Pulpit and the Life of To-day. *Hours to be arranged.*
PROFESSOR LEONARD]

[4. The Preacher's Use of the Bible. *Hours to be arranged.*
PROFESSORS LEONARD AND WOODBRIDGE]

B

[5. Worship as Life and the Expression of Life. *Hours to be arranged.*
PROFESSOR LEONARD]

[6. A Study of the Principles of Worship: especially adapted to advanced students and clergymen. *Hours to be arranged.*
PROFESSORS LEONARD AND KNIGHT]

C

[7. Pastoral Care, or the Minister in his Relation to a Single Parish or Community. *Tu., Th., Sat., 8.45.* (S) PROFESSOR LEONARD]

[8. Religious Pedagogy: especially adapted to clergymen and qualified Sunday-school teachers. *Hours to be arranged.*
In care of PROFESSOR LEONARD]

9. Parish Administration. *Hours to be arranged.* (S)
In care of PRESIDENT HAMILTON

* See page 69.

SIX-YEAR COURSE

A detailed synopsis follows of the Course of Six Years, arranged for one who enters with Greek * and Latin, and leading to degrees A.B. and B.D. For particulars concerning the several subjects, see pages 67 to 99, and for the strictly professional departments, pages 172 to 180.

First Year

First Term	No.	See Page	Second Term	No.	See Page
Mathematics	3	88	Mathematics	1(or 2)	88
Physics	1	89	Physics	1	89
Greek	2	75	Greek	2	75
French		71	French		71
or German		70	*or* German		70
English	1	67	English	2	67
Physical Training		98	Physical Training		98

Second Year

First Term	No.	See Page	Second Term	No.	See Page
Philosophy	1(or 2)	78	Oratory	1	69
History	1	81	History	1	81
Biology	1	94	Biology	1	94
or Chemistry	1	92	*or* Chemistry	1	92
German		70	German		70
or French		71	*or* French		71
English (*elective*)		68	English (*elective*)		68
Physical Training		98	Physical Training		98

Third Year

First Term	No.	See Page	Second Term	No.	See Page
Old Testament	1	172	Old Testament	1	172
New Testament	1	174	New Testament	2	174
English (*elective*)		68	English (*elective*)		68
Philosophy	3	78	*Two electives*		
Oratory	2	69			

* Those who enter with no Greek must take New Testament Greek in place of one of the free electives, and may substitute advanced Latin for Greek 2 in the following statement.

Fourth Year

FIRST TERM	No.	See Page	SECOND TERM	No.	See Page
New Testament	3	174	New Testament	3	174
History of Religions	5	174	History of Religions	5	174
Philosophy	6	78	Philosophy	7	79
English (*elective*)		68	English (*elective*)		68
Old Testament	5	173	*One elective*		
			Old Testament	5	173

Fifth Year

FIRST TERM	No.	See Page	SECOND TERM	No.	See Page
Homiletics	1	180	Homiletics	1	180
Applied Christianity		177	Applied Christianity		177
Philosophy of Theism		176	Philosophy of Theism		176
History of Religions	4	174	*Two electives*		
Political Science	1	85			

Sixth Year

FIRST TERM	No.	See Page	SECOND TERM	No.	See Page
Theology	2	177	Theology	2	177
Homiletics	2	180	Homiletics	2	180
Public Law	1	83	Pastoral Care		180
Two electives			*Two electives*		

FOUR-YEAR COURSE

A detailed synopsis follows of the Course of Four Years, arranged for one who enters without Greek,* and leading to the degree of B.D.

First Year

First Term	No.	See Page	Second Term	No.	See Page
New Testament	4	174	New Testament	4	174
Old Testament	1	172	Old Testament	1	172
History	1	78	History	1	78
English	1	67	English	2	67
English (*elective*)		68	English (*elective*)		68
Physical Training		98	Physical Training		98

Second Year

First Term	No.	See Page	Second Term	No.	See Page
New Testament	1	173	New Testament	2	173
Old Testament	5	172	Old Testament	5	172
English (*elective*)		68	English (*elective*)		68
History of Religions	5	174	History of Religions	5	174
Philosophy	3	78	Oratory	1	69
Physical Training		98	Physical Training		98

Third Year

First Term	No.	See Page	Second Term	No.	See Page
New Testament	3	174	New Testament	3	174
Homiletics	1	180	Homiletics	1	180
Philosophy	6	78	Philosophy	7	79
History of Religions	4	174	*Two electives*		
Oratory	2	69			

Fourth Year

First Term	No.	See Page	Second Term	No.	See Page
Homiletics	2	180	Homiletics	2	180
Theology	2	176	Theology	2	177
Philosophy of Theism		176	Philosophy of Theism		176
Applied Christianity		177	Applied Christianity		177
One elective			Pastoral Care		180

* One who enters with Greek and Latin has a larger range of electives.

Supplementary Information

In addition to the information given on pages 167 to 183, the following is of interest to divinity students.

RELIGIOUS OBSERVANCES

The students in the Crane Theological School attend daily morning prayer in Goddard Chapel; and religious services, in the care of the students, are held in Miner Hall from time to time.

SUPPLEMENTARY LECTURES

Lectures which bear upon the general work of the Christian ministry, and upon special subjects of study, are given at intervals throughout the year by well-known clergymen and others of the vicinity.

The most noted divines of New England officiate every Sunday within easy distance, and may be studied by the student in respect to their teachings and their methods. It is the policy of the school to encourage the judicious use of these important instrumentalities of culture.

LICENSE TO PREACH

The regular time for applying for licensure is a year and a half before graduation. Before that time the members of the Theological School are not allowed to preach.

BUILDINGS FOR THE USE OF THE THEOLOGICAL SCHOOL

Miner Theological Hall contains eight large, well-lighted, and well-ventilated lecture-rooms, and a special room for the meetings of the Faculty. Until other buildings are provided, one of the rooms in this hall is used for the historical and reference libraries, and one is appropriately furnished for the religious services of the school. A third room in the same hall is furnished as a parlor, and is known as the Maria Miner Reception Room.

Paige Hall, the dormitory of the Theological School, contains thirty-six single rooms, heated by steam and lighted by gas. Each room is provided with all necessary furniture — except sheets, blankets, pillow-cases, and towels.

EXPENSES AND PECUNIARY AID

Students in the Theological School are charged *one hundred dollars* annually for tuition. This charge includes the privilege of occupying a room in Paige Hall, and provision for heating and caring for it.

The following scholarships are assigned exclusively to theological students; certain prizes are also available under conditions, especially as described on pages 206 to 209 of this catalogue.

The General Convention of Universalists aids students by free scholarships, not exceeding one hundred and twenty-five dollars a year to any one student, subject always to the recommendation of the Faculty of the Theological School. Those students, also, who are in the regular course are permitted to preach, under the direction of the Faculty, during the year-and-a-half preceding their graduation. In this way they may add to their pecuniary resources.

THE GREENWOOD SCHOLARSHIP.—The income of one thousand dollars, bequeathed by the late Mrs. Eliza M. Greenwood, of Malden, is given to that member of the advanced class in homiletics who, maintaining a high standard of work as a student, has made in all the work in Homiletics and Oratory the most satisfactory progress.

THE JOHN MURRAY SPRAGUE AND ELIZA FLETCHER SPRAGUE SCHOLARSHIP.—The income of two thousand dollars, bequeathed by the late John M. Sprague, is appropriated to the aid of needy and deserving students in the Crane Theological School, preference being given to any student, otherwise eligible, who is a direct descendant of the donor's father, John Sprague.

THE DOCKSTADER SCHOLARSHIP.—The income of ten thou-

II. FOR STUDENTS IN THE ENGINEERING SCHOOL:

9:30–10:30 A.M.—All students registering for the first time will pay the registration fee of five dollars at the Bursar's office.

10–12 A.M.—All students in this School obtain blanks and file programs at the Registrar's office.

11 A.M. — All Freshmen assemble in the chapel for instructions concerning registration, and information regarding courses.

On Friday, the second day of the term, Junior, Sophomore, and Freshman classes meet instructors for making of divisions and general instruction.

Regular program appointments are in force on Saturday.

Consultations concerning programs for the second half-year are held by appointments with advisers and major instructors during the examination period. On the first day of the second term, between 9 and 12 o'clock, students in all departments file their individual programs.

Recitations begin in accordance with the regular program on Tuesday, the second day of the term.

A registration fine of two dollars is imposed upon students in all departments who fail to register in person during the time prescribed above. This fine must be paid to the Bursar before registration can be permitted. This rule does not apply to students registering for the first time. Students are not recognized as members of classes until they have met all requirements of registration.

During the hours set apart for registration, instructors may be seen for consultation and for approval of plans of study, in rooms to be announced by posted bulletins.

PROGRAM LIMITATION

Plans of study are subject to the following regulations:

I. FOR STUDENTS IN THE SCHOOL OF LIBERAL ARTS AND THE CRANE THEOLOGICAL SCHOOL:

No Freshman shall take a program of more than sixteen term hours for the first half-year; nor shall a program of more than fifteen term hours

be taken by any student who has received for the preceding half-year grade L in subjects aggregating three term hours, or grade C in subjects aggregating more than six term hours. But a student who has failed in a subject may repeat that subject, provided his program is not thereby increased to more than eighteen term hours.

A program in excess of eighteen term hours shall not be allowed except by special permission of the Faculty.

Physical Training is disregarded in the consideration of program limitation.

II. FOR STUDENTS IN THE ENGINEERING SCHOOL:

The Freshman program is prescribed. Permission to vary the Freshman program, to take a program in excess of nineteen term hours, or to take a subject out of course, must be obtained by petition to the Committee on Promotions.

PROGRAM

The unassigned subjects in the five o'clock column of the program are so far as possible assigned at a meeting in Ballou 4 at 12 M. on the second day of the first half-year, and at the same hour on the first day of the second half-year. Every student concerned is required to be present at this time, either in person or by a proxy furnished with a complete tabular program of class engagements. Every instructor concerned is expected to be present in person. These appointments supersede all others. No assignment or change of hour is official except as posted by the Committee on Program.

Any instructor is permitted, after the second full week of a term, to transfer a subject to another program hour, under the following conditions: (a) all students taking the subject must have the new hour free; (b) previous notice must be given to the Committee on Program; (c) the change, if finally made, must be reported at the College Office.

If such a change can be made in two consecutive years, the subject may be permanently transferred to the new hour.

REVISED SCHEDULE OF HOURS

A revision of the program is contemplated, to take effect in September, 1910. All college work except Physical Training

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If such a change can be made in two consecutive years, the subject may be permanently transferred to the new hour.

REVISED SCHEDULE OF HOURS

A revision of the program is contemplated, to take effect in September, 1910. All college work except Physical Training

will close at 4 P.M. Classes will begin at 8.45 A.M., with many laboratory courses opening at 8 A.M. Chapel exercises will be held at 10.45 A.M.

PROMOTIONS

All candidates for degrees are classified as Freshmen until they have removed all entrance conditions.

Candidates for the degree of Bachelor of Arts, or Bachelor of Science in the School of Liberal Arts, must have received, for promotion to the Sophomore class, a credit of not less than twenty-seven term hours, and for promotion to the Junior class a credit of not less than fifty-seven term hours. To become a member of the Senior class, a student must have completed all the prescribed work, and have credit for not less than eighty-seven term hours.

Candidates for the degree of Bachelor of Science in the Engineering School must have received, for promotion to the Sophomore class, a credit of not less than twenty-nine term hours; for promotion to the Junior class a credit of not less than sixty-four term hours; and for promotion to the Senior class a credit of not less than ninety-nine term hours.

GRADES OF SCHOLARSHIP

A student's rank is officially recorded by letters, as follows: **A**, excellent; **B**, good; **C**, fair; **L**, passed with low standing; **F**, work incomplete or unsatisfactory; **FF**, complete failure.

The mark **F** imposes a condition which must be removed at a date to be determined by the Committee on Promotions of the proper Faculty on consultation with the instructor. In case a mark of **F** is not removed at the date thus determined, the entry will be changed to **FF**. The student must then discontinue any dependent subjects which he is taking, and can obtain a clear record only by repeating the subject in which **F** was given. The responsibility for the removal of the condition rests with the student, who is required to make the necessary arrangement with the instructor and to present at the office a statement from the instructor that the work has been accomplished.

Reports of the work of Freshmen are sent to parents after the first term. Reports for the year are sent in July to all.

Except as above stated, marks are not issued from the office.

MAJOR SUBJECTS

Every candidate for the degree of Bachelor of Arts shall choose a major subject before the beginning of the Sophomore year.

A change of major subject may be made not later than the end of the Junior year, by vote of the Committee on Promotions on petition approved by the two major instructors concerned.

A second major subject may be granted not later than the end of the Junior year, under the same conditions.

HONORS

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the College of Letters who shall have attained Grade A in approved subjects aggregating not less than eighteen term hours in a major department, and an average of Grade B in the collateral subjects. Subjects marked in the catalogue with an asterisk (*) will not count for Honors. Those marked with a double asterisk (**) will be counted for Honors only when special requirements, to be defined by the instructors, have been complied with. Final Honors will be conferred only upon recommendation of the head of the department in which Honors are desired.

FINAL HONORS IN ELECTRICITY will be conferred at Commencement upon any member of the graduating class in the Engineering courses who shall have complied with the following conditions:—

In the two years immediately preceding graduation:—

1. He must have attained Grade A in the equivalent of six hours a week for a year in the subject.

2. He must also have attained Grade A in extra work in this or a cognate subject equivalent to three hours a week for a year.

3. He must have attained Grade B in the average of all his studies.

HONORABLE MENTION will be made in the Commencement program and in the annual catalogue of a student who has attained, during the two years immediately preceding graduation, Grade A in nine term hours and not less than Grade B in three additional term hours of approved work in one department. Subjects marked in the Catalogue with an asterisk (*) or with a double asterisk (**) are under the conditions explained above as applying to Final Honors.

Candidates for Honorable Mention are expected to report to the Office on or before May 1 the department or departments in which they look for such distinction.

ADMISSION FROM OTHER COLLEGES

Students entering Tufts College, after pursuing study in any other college of equal rank, and being honorably dismissed therefrom, are credited with the number of hours of work actually done toward the requirements of Tufts College, as certified by the proper authorities of the college from which the student comes. Such students must present satisfactory certificates showing the amount and character of work already accomplished, in order to obtain credit on a course of this College.

SPECIAL STUDENTS

Students who are not candidates for a degree, and who wish to pursue a special course of cognate studies, will be admitted to the College, subject to the following regulations:—

1. Every Special Student shall choose a major department, and shall make up a plan of study under the direction and subject to the approval of the major instructor.

2. The student shall satisfy the instructor in each subject included in the approved plan of study that he is able to pursue the work.

3. First-year Special Students are limited to sixteen program hours, and thereafter the same rules apply to them as to regular students in the School of Liberal Arts. (See page 188.)

4. A Special Student, on leaving College, shall be entitled to a certificate giving the grade attained in each subject pursued, and signed by the President and the Registrar.

TERMS AND VACATIONS

Commencement occurs on the third Wednesday in June, and the college year begins on the Thursday following the third Wednesday in September. The year is divided into two terms of eighteen weeks each. There are no college exercises during a recess of four days at Thanksgiving, twelve days at Christmas, four days at the mid-year period, and seven days beginning with the Wednesday evening preceding the nineteenth of April (see calendar, pages 3 and 4). Washington's Birthday and Memorial Day are holidays. An examination period of four days is held at the close of each half-year, during which time the daily class exercises are suspended.

Students are required to report in person at the Registrar's office within two hours after the last program appointment of the student preceding each vacation of more than a single day, except at the mid-year period; and within two hours before the first program appointment following such vacation.

This registration must take place between 8.45 A.M. and 5.15 P.M. A fine of two dollars will be imposed on each student who shall fail to report as above provided. The regularly appointed registration of studies at the beginning of each term shall be construed as reporting in person.

ABSENCES

Students are required to notify the Registrar at the beginning of an absence from any cause involving more than three consecutive program appointments. This report may be made in advance, and should state the cause of absence and its probable duration. A similar report is to be made before entering upon college work after the absence.

These reports are for the information of the college authorities, and do not excuse the student from chapel attendance, nor from his obligations to the various instructors.

For the first failure to make such a report a fine of fifty cents shall be levied, and for each subsequent failure a fine of two dollars. In case of the absence of any student organization

numbering not less than ten persons, notice may be given for all by one authorized representative.

No student organization shall be allowed to make engagements involving absence from college exercises unless such engagements are approved by the appropriate committee of the Faculty.

A report filed in accordance with these regulations shall not take the place of the required registration before and after vacations of more than a single day.

Absence from Examinations.—Students absent from examinations and requiring special examinations to make up for such absence are charged two dollars for each special examination.

OFFICE HOURS

The President may be found in the Faculty Room in the morning, from 8.45 to 9.45. The Dean of the School of Liberal Arts is in his office in Ballou Hall, and the Dean of the Engineering School in his office in the Bromfield-Pearson Building, throughout the forenoon, except for class engagements. The office of the Registrar and Secretary is open every morning, from 8.45 to 12.45, and every afternoon except Saturday, from 2.00 to 5.00. The Bursar will be in his office in Ballou Hall during term time, Monday, Wednesday, Thursday and Friday mornings, from 8.30 to 12.00 o'clock.

RELIGIOUS OBSERVANCES

Goddard Chapel, erected in 1882-83, is the gift of Mrs. Mary T. Goddard, as a memorial of her husband, the late Thomas A. Goddard. Morning prayers are held daily, at which attendance is required. The care of the pulpit on Sunday devolves upon the President. A trained choir, composed of men and women students, sings on Sunday. Attendance upon Sunday service is voluntary.

The RUSSELL LECTURE, established in accordance with a bequest of the late James Russell of Arlington, is delivered before the Trustees, Faculty, and students, on the second Sunday

of the college year, by either a clergyman or a layman, on a subject prescribed by the testator.

Two subjects are presented, in alternate years.

The subject for 1909 was "*The Sufficiency of the Promises of the Gospel to meet the Reasonable Wants of Man both in Time and in Eternity.*"

The subject for 1910 is "*The Importance of Christian Faith and Belief in the Formation of the Character of the Good Citizen and the Good Man.*"

TUFTS COLLEGE STUDIES

A publication called "Tufts College Studies" has been established, as a means of presenting to the world the results of original work done in the different departments of the College. The numbers, which are issued as material is ready, are distributed to educational institutions and learned societies. The College desires to establish regular exchanges of these Studies with all publishing institutions at home and abroad. Correspondence regarding exchanges should be addressed to the Librarian of Tufts College. One volume and two numbers of a second volume of the scientific series have been issued, and a single number of the English series. The editorial board of TUFTS COLLEGE STUDIES for the current year is made up of the President of the College and Professors Knight, Hooper, Kingsley, and Wade.

ATHLETICS

The supervision of all athletic sports is vested in a Board of Directors of Athletics, consisting of nine members, three of whom are appointed from the Faculty, three from the Alumni, and three elected from the undergraduates. This board through its sub-committees controls the expenditures of all moneys, the hiring of coaches, the arranging of games, the eligibility of players, and generally seeks to raise all college sports to a level of genuine usefulness. The Director of the Gymnasium limits the candidates for college teams to those students who have shown by a physical examination that they are qualified to engage in strenuous exercise.

EXPENSES

The charge for instruction in the School of Liberal Arts is *one*

hundred and twenty-five dollars a year, or *five hundred dollars* for the full course whether it be completed in three, four, or more years. A registration fee of five dollars is charged to all students entering the School of Liberal Arts or the Engineering School.

The charge for instruction in the Engineering School is *one hundred and fifty dollars* a year, or *six hundred dollars* for the course.

In the case of students admitted to advanced standing, the fees will be based upon the amount of work done under the direction of Tufts College.

No part of the fees and charges for a term is returnable to the student if he leaves during the term.

Students in the chemical laboratories are charged for breakage, and *four dollars* a term for materials used. A fee of *two dollars and a half* a term is required for each laboratory course in the Department of Biology.

Half room-rent, including heat, ranges from twenty-five to ninety-one dollars, in the several dormitories for men. In those for women, half room-rent ranges from thirty-seven to eighty-five dollars. Students furnish their own rooms. Any special damage done by students to college property is charged in the term bills. Rooms in the college halls will be open for occupancy of students on and after the Wednesday of the week preceding the opening of the college year, and will be closed on the Wednesday after Commencement. Non-resident students in all departments, except the Medical and Dental Schools, are subject to a fixed annual charge of ten dollars.

A place of study for non-resident women students is provided in Ballou Hall. Men students may obtain the use of day-rooms in the dormitories by arrangement with the Bursar, on payment of a moderate fee, which is added to the regular non-resident charges.

Payment of tuition, room rent, and other charges in all departments of the College is made in advance at the beginning of each half-year, on or before October first and March first.

All college charges are payable to the Bursar, and all arrangements with regard to rooms are to be made with him. The Bursar must certify that all college charges have been met before a student can receive his degree or a letter of honorable dismissal.

The Executive Committee of the Trustees has power to order the suspension or dismissal of a student for failure to keep his bills promptly paid, or for other good and sufficient cause.

By an arrangement with the Somerville Hospital, resident students are assured free hospital treatment in case of illness, during their entire course, at a cost of two dollars a year.

The cost of table board is from $4.00 to $5.00 per week. Other expenses, such as for light, furniture, books, clothing, washing, and incidentals, vary with the economy of each student. Books and instruments required for the courses in Engineering cost from fifteen to twenty-five dollars a year.

The following estimates represent the fixed annual expenses, not including room-rent or the non-resident fee: —

	School of Liberal Arts	Engineering School
Tuition	$125.00	$150.00
Physical Training, including gymnasium and grounds	10.00	10.00
Reading-room	1.00	1.00
Hospital	2.00	2.00
Average board, $4.50 a week (36 weeks)	162.00	162.00
Total	$300.00	$325.00
Registration fee, at the beginning of the course	5.00	5.00

Special students in the School of Liberal Arts pay the initial registration fee and $20.00 a term for each subject of three hours a week or less, together with the usual laboratory fees.

STUDENTS' DRAFTS

The College issues drafts for the use of students in books of twenty-five to fifty dollars. These are freely negotiable in the college community and are becoming so in all banks and stores in greater Boston. No commission is charged, and the holder is protected from loss or theft. The drafts are for sale at the Bursar's office and at the College Book Store.

INSURANCE

Arrangements may be made through the Bursar's office whereby students in any of the dormitories can insure their personal effects, including books, furniture, and wearing apparel. The cost of such insurance is fifty cents for one hundred dollars for one year. Insurance is placed only in multiples of one hundred dollars, no risk is taken for less than one hundred dollars, and all premiums are payable in advance.

THE DORMITORIES

The halls for the accommodation of students are seven in number. East, West, Dean, Paige, and Curtis Halls, for men, are arranged with convenient rooms in suites, are warmed by steam, lighted by gas or electricity, and have good modern plumbing. These halls provide rooms for two hundred and fifty men. Metcalf Hall, with accommodations for thirty-two women students, is a gift to the College by Mr. Albert Metcalf, of Newton. The first floor contains the rooms of the matron, a reception-room, cloak-room, reading-room, and dining-room. The second and third floors have pleasant rooms for students, with ample bath and toilet conveniences on each floor. In the wing is the kitchen on the first floor, the servants' room on the second. Every safeguard of health is provided. The Start House furnishes another home for women, with a matron, and rooms for thirteen students.

Women students cannot be received unless they reside in the dormitories or with their families.

REGULATIONS CONCERNING COLLEGE ROOMS

The annual assignment of rooms will take place in the month of May, at a time appointed by the Bursar, due notice being given upon the official bulletin board. Students occupying any room may retain it for the following academic year by signing a new room-agreement. All rooms not thus provided for will be offered for rent to members of the three upper classes. Rooms not assigned at the annual allotment will be open for choice to members of the entering class, in the order of application.

The right to occupy a college room is given only to the

student or students to whom it is assigned: neither exchanges nor transfers of rooms are allowed, except by consent of the Bursar.

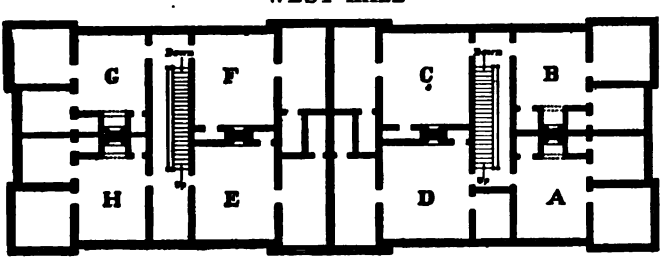
All men's rooms are for two students; except East 3, 12, 17, 22, 27, and 32, West 16½, and Curtis 4 and 12, and all rooms in Paige, which are for a single student each. Where more than two students occupy a room, the rent will be increased proportionately.

Each student receives his key on payment of fifty cents, which is refunded on the return of the key at the close of the college year.

The prices given for room rent in the lists below are for the whole room during the academic year, and include heat and care. All men's rooms are lighted with gas; Paige Hall has electricity also. Each suite is metered separately, and the occupants pay for the gas actually consumed. Metcalf Hall has both gas and electricity. Start House has electricity only. None of the rooms is furnished.

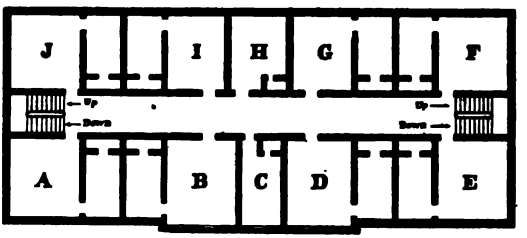
Room rent in the men's dormitories is in accordance with the following diagrams and prices:—

WEST HALL



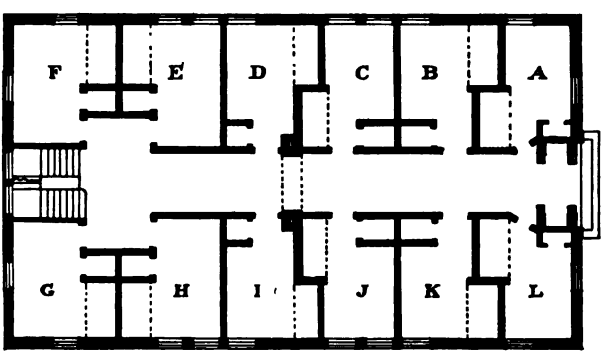
FIRST FLOOR		SECOND FLOOR		THIRD FLOOR		FOURTH FLOOR	
A 1	$128	A 5	$182	A 9	$140	A 13	$96
B 2	102	B 6	128	B 10	118	B 14	80
C 3	92	C 7	100	C 11	96	C 15	74
D 4	128	D 8	172	D 12	140	D 16	96
E 17	128	E 21	172	E 25	140	E 29	96
F 18	92	F 22	100	F 26	96	F 30	74
G 19	102	G 23	128	G 27	118	G 31	80
H 20	128	H 24	182	H 28	140	H 32	96

EAST HALL



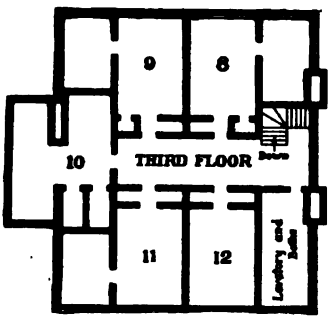
BASEMENT	FIRST FLOOR	SECOND FLOOR	THIRD FLOOR
A	A 6 . . $ 96	A 15 . . $110	A 25 . . $102
B	B 7 . . 92	B 16 . . 110	B 26 . . 100
C	C	C 17 . . $43	C 27 . . $40
D	D 8 . . $92	D 18 . . 110	D 28 . . 100
E	E 9 . . 100	E 19 . . 118	E 29 . . 110
F 1 . . $60	F 10 . . 100	F 20 . . 110	F 30 . . 100
G 2 . . 55	G 11 . . 80	G 21 . . 86	G 31 . . 80
H 3 . . 30	H 12 . . 40	H 22 . . 43	H 32 . . 40
I 4 . . 55	I 13 . . 80	I 23 . . 86	I 33 . . 80
J 5 . . 60	J 14 . . 86	J 24 . . 90	J 34 . . 86

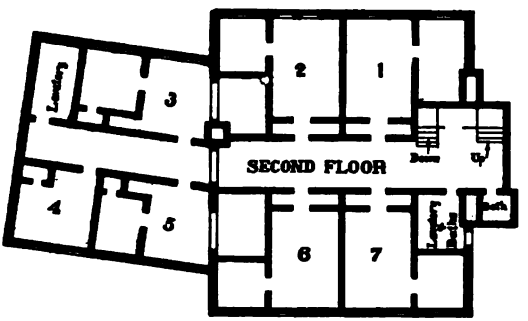
PAIGE HALL



In Paige Hall the plan of each floor is the same. From A to L, the rooms are numbered from 1 to 12 on the first floor; from 13 to 24 on the second, and from 25 to 36 on the third floor. The price for each room is $50.

CURTIS HALL

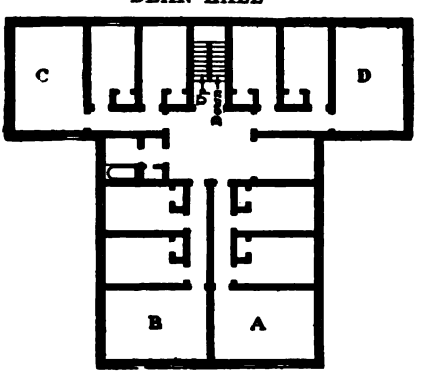




1 . . $80	4 . . $ 50	7 . . $85	10 . . $85
2 . . 80	5 . . 100	8 . . 85	11 . . 85
3 . . 90	6 . . 85	9 . . 85	12 . . 45

Nos. 4 and 12 are single rooms.

DEAN HALL



DEAN HALL

(See previous page for plan)

FIRST FLOOR	SECOND FLOOR	THIRD FLOOR	BASEMENT
A 1 . . $160	A 5 . . $160	A 9 . . $160	A 13 . . $85
B 2 . . 160	B 6 . . 160	B 10 . . 160	B 14 . . 85
C 3 . . 160	C 7 . . 160	C 11 . . 160	C
D 4 . . 160	D 8 . . 160	D 12 . . 160	D

METCALF HALL AND START HOUSE

In the women's dormitories, the prices for room rent are as follows. In Metcalf Hall, room B, $120; C, $100; 6, 7, 14, and 15, $170; 2, 3, 10, and 11, $150; 4 and 12, $90; 13, $80. These rooms accommodate two students each. The following rooms are for a single student: 1, 8, 9, and 16, $75; A, $50; 5, $40. In the Start House there is but one room for a single student: number 6, at $40. The other rooms are for two persons: 1, 3, and 4, $120; 5, $110; 7, $100.

SCHOLARSHIPS

Awards of scholarships are made by the Board of Trustees, on the recommendation of the Faculty. Application for scholarships must be filed with the Secretary on blanks furnished for the purpose, on or before the first day of October; and, if the applicant be a minor, must be sanctioned by his parent or guardian. Grants of aid will apply only for the year in which granted, and will not in themselves be ground for continuance of assistance. If aid is desired during the following year, a new application must be filed.

New students desiring scholarships will be requested to file answers to specific questions on a blank provided for this purpose. This blank must be accompanied by a letter from the principal of the school last attended, containing a statement as to the applicant's character and especially as to his standing as a student. If there appears to be real need and evidence of promise of scholarship, the applicant may be assured of scholarship aid for the first half of the Freshman year, at the rate of $75 per year.

After the first half of the Freshman year, continuance of aid

will depend upon the student's need and the grade of his work. Students are required to attain for graduation a grade of at least C in a certain proportion of their work. No student is considered eligible for scholarship aid who has, in the preceding year (or term, if a Freshman) failed to meet this requirement.

Of those considered eligible for scholarship aid, a limited number of those who are at once highest in scholarship and most in need will be assigned scholarships at the rate of $100 per year. Those who are lowest in scholarship and least in need will be assigned scholarships at the rate of $50 per year. Others may be assigned scholarships at the rate of $75 per year.

The following conditions must be strictly observed by the applicant:

(a) His expenditure must be moderate, and strictly in accordance with his declaration of limited means.

(b) He must be regular in attendance.

(c) He must be guilty of no behavior reflecting upon his moral character or subversive of good order in the College.

Applicants residing in college dormitories will be given preference over those residing at home.

Scholarships are available for those students only whose term bills are fully paid within ten days after the opening of each college term, or after such bills shall have become due. The bills of any student whose connection with the College ceases are due at that time.

The following scholarships have been founded in the College. Except in special cases, when the donor has otherwise stipulated, the Trustees will award scholarship aid in such sums as they may determine in each case.

THREE STATE SCHOLARSHIPS.—Established in accordance with a resolve of the Commonwealth.

FIVE HOWLAND SCHOLARSHIPS.—Established from the income of the bequest of the late Edwin Howland, of South Africa.

FIVE WALKER MATHEMATICAL SCHOLARSHIPS.—Established in honor of the late William J. Walker, M.D., of Newport, R. I., and payable from the income of the Walker Fund.

TWO MOSES DAY SCHOLARSHIPS.—Founded by the late Moses Day, of Roxbury.

THE A. A. MINER SCHOLARSHIP.—Founded by the late Alonzo Ames Miner, D.D., of Boston.

THE REBECCA T. ROBINSON SCHOLARSHIP.—Founded by the late Charles Robinson, LL.D., of Newton.

THE WILLIAM OSCAR CORNELL SCHOLARSHIP.—Founded by William Oscar Cornell, of Providence, R. I.

THE LAURA A. SCOTT SCHOLARSHIP.—Founded by Mrs. Laura A. Scott, of Ridgefield, Conn.

THE STOW SCHOLARSHIP.—Founded by the late Mrs. Eugenia D. Stow, of Meriden, Conn.

THE NORCROSS SCHOLARSHIP.—Founded by James A. and Mrs. Mary E. Norcross, of Worcester.

THE ANDERSON SCHOLARSHIP.—Founded by John M. Anderson, of Salem, in the name of John M. and Rebecca Anderson.

THE TRAVELLI SCHOLARSHIP.—Founded by Mrs. Emma R. Travelli, of Newton.

THE WHITTIER SCHOLARSHIP.—Founded by the late Charles Whittier, of Roxbury, in the name of Charles and Eliza Isabel Whittier.

THE TALBOT SCHOLARSHIP.—Founded by the late Newton Talbot, of Boston.

THE SIMONS MEMORIAL SCHOLARSHIP.—Founded by Mrs. Mary A. Simons, of Manchester, N. H., in memory of Hiram H., Augustus, and Frank Simons.

THE AMASA AND HANNAH L. WHITING SCHOLARSHIP.—Founded by Mrs. Hannah L. Whiting, of Hingham.

THE MARTHA GOLDTHWAITE MEMORIAL SCHOLARSHIP.—Founded by the late Willard Goldthwaite, of Salem.

THE ANDREW J. CLARK MEMORIAL SCHOLARSHIP.—Founded by Mrs. Abbie B. Clark, of Orange.

THE SARAH E. SAYLES MEMORIAL SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE COUSENS SCHOLARSHIP.—Founded by the late John E. Cousens, of Brookline, in the name of John E. and Sarah C. Cousens.

THE BENJAMIN F. SPINNEY SCHOLARSHIP.—Founded by Benjamin F. Spinney, of Lynn.

THE HENRY F. BARROWS SCHOLARSHIP.—Founded by Henry F. Barrows, of North Attleboro.

THE ELLERY E. PECK MEMORIAL SCHOLARSHIP.—Founded by the late Henry Rollins, of Bangor, Me.

THE J. H. MORLEY MEMORIAL SCHOLARSHIP.—Founded by Herbert Small Morley, of Templeton.

THE EDWIN H. CHAPIN MEMORIAL SCHOLARSHIP.—Founded by friends of the late Edwin Hubbell Chapin, D.D., in New York City.

THE THOMAS A. GODDARD MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HOSEA BALLOU, 2D, MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HENRY E. COBB SCHOLARSHIP.—Founded by the late Henry E. Cobb, of Boston.

THE MARY ANN WARD SCHOLARSHIP.—Founded by Sylvester L. Ward, of Boston.

THE MARIA P. WINN SCHOLARSHIP.—Established from a bequest of the late Mrs. Maria P. Winn, of Woburn.

THE JOSEPH D. PEIRCE MEMORIAL SCHOLARSHIP.—Founded by the children and other relatives of the late J. D. Peirce, D.D., of Attleboro.

FIVE JOHN AND LUCY H. STOWE SCHOLARSHIPS.—Five scholarships for women students, founded by the late Mrs. Lucy H. Stowe, of Lawrence.

TWO SIMMONS SCHOLARSHIPS.—Founded by the will of Robert F. Simmons, of Attleboro, in the name of Mary F. and Robert F. Simmons.

THE JOSHUA S. AND HARRIET N. WHITE SCHOLARSHIP.—Founded by the late Joshua S. White, of Pawtucket, R. I.

THE JOHN B. PERKINS SCHOLARSHIP. — Founded by Ann Maria Perkins, of Medford.

TWO BARNARD SCHOLARSHIPS.—Founded by the late Mrs. Caroline M. Barnard, of Everett.

THE BARTLETT SCHOLARSHIP.—Founded by the late Mrs. Nancy Bartlett, of Milford.

THE B. H. DAVIS SCHOLARSHIP.—Founded by the Rev. B. H. Davis, of Weymouth, for the benefit of students of the College of Letters who are preparing to enter the Christian ministry.

THE LATIMER W. BALLOU SCHOLARSHIP.—Founded by the late Latimer W. Ballou, of Woonsocket, R. I.

THE NATHANIEL WHITE SCHOLARSHIP.—Founded by Armenia S. White, of Concord, N. H.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

THE RHODE ISLAND SCHOLARSHIP.—Founded by several persons in Rhode Island.

TWO CHARLES AND FANNIE A. MINER BOOTH SCHOLARSHIPS.—Founded by the late Charles Booth, of Springfield, Vermont.

THE LUTHER GILBERT SCHOLARSHIP.—Founded by the late Mrs. Luther Gilbert, of Roxbury.

THE ORMSBEE CLASS SCHOLARSHIP.—Founded by Benjamin F. Smith, of Pawtucket, R. I.

TWO MARY AND LUTHER GILBERT SCHOLARSHIPS.—Founded by Mrs. Mary G. Knight, of Roxbury, for the benefit of women.

THE JAMES M. AND EMILY COOK SCHOLARSHIP.—Founded by Henrietta J. States, of Boston.

THE WILLIAM H. SHERMAN SCHOLARSHIP.—Founded by the late William H. Sherman, of Cambridge.

THE DAVIS COOK SCHOLARSHIP.—Founded by the late Davis Cook of Cumberland, R. I.

THE AUSTIN B. FLETCHER SCHOLARSHIP.—Founded by Austin Barclay Fletcher, of New York City.

THE JONAS CLARK WELLINGTON SCHOLARSHIP.—Founded by Mrs. Sarah C. Fisher Wellington, of Cambridge.

THE MARY L. GROCE SCHOLARSHIP.—Founded by the late Mary L. Groce, of Roxbury.

THE JOHN MURRAY SPRAGUE AND ELIZA FLETCHER SPRAGUE SCHOLARSHIP.—Founded by the late John Sprague, of Lowell.

THE MARY A. RICHARDSON SCHOLARSHIP.—Founded by Mrs. Mary A. Richardson, of Worcester.

TWO WARREN SCHOLARLHIPS.—Founded by the late Dr. Ira Warren, of Boston.

The following scholarships of fifty dollars each are awarded annually:—

THE A. A. MINER SCHOLARSHIP.—Founded by the late Alonzo Ames Miner, D.D., of Boston.

THE PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of New Rochelle, N. Y.

THE MOSES DAY SCHOLARSHIP.—Founded by the late Moses Day, of Roxbury.

THE JOSEPH H. WALKER SCHOLARSHIP.—Founded by Joseph H. Walker, of Worcester.

THE GEORGE C. THOMAS SCHOLARSHIP.—Founded by George C. Thomas, of Philadelphia, Pa.

THE ALBERT W. SAYLES SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

THE CHARLES A. AND CORNELIA B. SKINNER SCHOLARSHIP.—Founded by the late Rev. Charles A. Skinner, D.D., and Mrs. Cornelia B. Skinner, of Cambridge, Mass.

The following scholarships are awarded under special conditions:—

THE GREENWOOD PRIZE SCHOLARSHIP IN ORATORY.—Founded by the late Mrs. Eliza M. Greenwood, of Malden, and given to such student as shall have made, as the result of faithful work, together with at least a fair degree of attainment, the greatest improvement in Oratory.

THE WENDELL PHILLIPS MEMORIAL SCHOLARSHIP.—Founded to perpetuate the name, fame, and influence of Wendell Phillips. This scholarship is to be awarded to a student who has completed the Freshman and Sophomore years, and he is to have the benefit of it during the remainder of his course. The beneficiary must be of sound body, high character, and ability in declamation and debate, and must comply with certain special conditions, including participation in a competitive debate of the applicants at the end of the Sophomore year. The specific conditions governing the award of this scholarship may be obtained by those intending to apply therefor from the Secretary of the Faculty, to whom application should be made early in the Sophomore year. The income of this scholarship is at present seventy dollars.

THE MOSES TRUE BROWN SCHOLARSHIP.—A scholarship yielding fifty dollars annually, founded by the late Moses True Brown, of Sandusky, Ohio, formerly Professor of Oratory in Tufts College, for encouraging and assisting worthy students in the department of Oratory.

THE PRIZE SCHOLARSHIP OF THE CLASS OF 1898.—The sum of fifty dollars is given annually by the Class of 1898 to that Senior who at the end of the Junior year shall have maintained the highest excellence in a course of study broadly and wisely chosen.

THE PRIZE SCHOLARSHIP OF THE CLASS OF 1882. — The sum of one hundred dollars is given annually by the class of 1882 to that member of the College who best exemplifies the combination of ability in athletics and excellence in scholarship.

ALPHA OMICRON PI PRIZE SCHOLARSHIP.—Founded by the alumnae of the Tufts Chapter of Alphi Omicron Pi, and given to that woman in the senior class who shall have made the best record in the prescribed work of the A. B. Course.

FUNDS FOR WOMEN

The Woman's Universalist Missionary Society of Massachusetts maintains a fund which is loaned to deserving women students, in sums of one hundred dollars, at four per cent. This fund now amounts to about six thousand dollars.

The Hettie Lang Shuman Memorial Fund was founded by Mr. A. Shuman, who presented one thousand dollars to the College, in memory of his wife. The interest of this fund is annually expended in aiding deserving women students.

The Massachusetts Society for the University Education of Women has at its disposal a small loan fund, and also a limited

amount of money devoted to scholarship purposes for regular young women students of the upper classes. Inquiries concerning both of these may be made of the Dean.

PRIZES

GODDARD PRIZES.— In the second term of the academic year three prizes of *fifteen dollars* each are assigned from the Goddard Prize Fund, as follows :—

A prize for the best examination, by a member of the Junior or Senior class, on the sixty-fourth poem of Catullus, or a Satire of Juvenal, or an Epistle of Horace.

A prize for the best examination, by a member of the Junior or Senior class, on the life and works of Solon.

The examinations for the Latin and Greek prizes will be held during the first week in May. Due notice of time and place will be given.

A prize for the best examination in the Mathematics of the first year.

RHETORICAL PRIZES.—Three prizes are awarded as follows :—

A first prize of forty dollars, a second prize of thirty dollars, and a third prize of twenty dollars. The preliminary competition will be open to all candidates for the degree of A.B., B.S., and B.D.

The rhetorical prizes are awarded by a committee, chosen by the Faculty, who judge the work presented by the competitors upon the public day appointed for that purpose. In order to enter the public competition, candidates, as well as their selections, must be approved by the Professor of Oratory. A preliminary competition is held about ten days before the competition announced in the calendar, at which a committee of the Faculty determine the contestants in the final and public readings.

The foregoing prizes are not awarded, unless in the opinion of the respective judges there is sufficient merit in the several contests to warrant their distribution.

THE CHARLES L. CORBIN PRIZE of $50 for a thesis in Metaphysics, founded by Professor and Mrs. Cushman. Open to students who, having elected Philosophy as a major subject, announce on the first day of October of their senior year the

subject of their thesis, and have the thesis completed on April first of that year. The prize may be awarded even if only one student competes for it. It may be withheld if among a large number of theses no one is deemed adequate. The committee of award will be chosen by Professor Cushman from the philosophical faculty of some other institution.

A regular day has been appointed for the annual announcement of the award of prizes and the assignment of Commencement parts,— Wednesday of the week preceding the Thanksgiving recess.

COMMITTEE ON STUDENT EMPLOYMENT

It is the object of the committee on student employment to inform students concerning positions which may give regular occupation during available hours of term time, or which may be temporarily filled during the vacation periods. Students who wish to make application for any occupation should register their names, with a statement of their qualifications for any special work, with PROF. HARRY G. CHASE, Chairman of the Employment Committee, Room 22, Robinson Hall.

Buildings and Equipment

The College buildings are nineteen in number. Ballou Hall contains recitation-rooms, the room of the President and Faculty, and the offices of the Dean, the Registrar, and the Bursar. It contains also the college bookstore. Other buildings are Barnum Museum; Goddard Chapel; Goddard Gymnasium; the Eaton Library; the Chemical Building; the Women's Gymnasium; Middle Hall; three dormitories,—East Hall, West Hall, Dean Hall, for men; Curtis Hall, containing the post-office, class-rooms, and rooms for students; Metcalf Hall and the Start House, for women students. The Bromfield-Pearson School building is available for technical courses of the College. Two buildings, Miner Hall and Paige Hall, are devoted to the use of the Divinity School. Robinson Hall provides for work in certain of the physical sciences. A power-house has been added, supplying light, heat, and power to the engineering buildings.

The new library building, erected through the gift of one hundred thousand dollars by Andrew Carnegie, is now occupied. At the suggestion of Mrs. Carnegie it is called the Eaton Memorial Hall, in honor of Charles Henry Eaton, '74, former pastor of the Church of the Divine Paternity, New York City.

In the summer the gates in the wire fence surrounding the buildings are closed at 5 P.M. on week days and all day Sunday.

EATON LIBRARY

In all, about sixty-six thousand bound volumes and forty thousand pamphlets are available for use. The College regularly receives more than two hundred periodicals. By favor of the late Senator Hoar the library is a depository for government publications. In the library building a reading-room, maintained by the students, supplies the daily and weekly papers. The student fund also provides a number of the popular and the more technical magazines. Separate rooms have been pro-

vided with facilities for the use of students working in the departments of History and Public Law, the Ancient Languages, the Modern Languages, Music, English, the Fine Arts, Philosophy, Political Science, Physics and Mathematics. The average annual increase by donation and purchase, for the last five years, has been about two thousand four hundred volumes.

In the general library is the collection of the Universalist Historical Society (six thousand volumes and several thousand pamphlets), to which, on application, students have free access. In Miner Hall is a selected reference library, for the use of theological students. In the Barnum Museum is the department library of Natural History, numbering more than twenty-eight hundred volumes and about sixty-eight hundred pamphlets. The Metcalf Musical Library is divided between the music rooms in Goddard Gymnasium, where the scores are kept, and the department room in the Eaton Memorial Library, which contains the collection of English works relating to music. About four hundred representative musical compositions, in form for use upon the automatic instruments in the music rooms, are available for use by students.

The library is open to all members of the College every day in the week, except Sunday, from 8.00 A.M. to 6 P.M.

BARNUM MUSEUM

The Barnum Museum of Natural History was built in 1883-84 by the late Phineas T. Barnum, who gave the College a fund for its maintenance and for the addition of two wings to the central building. One of these wings has been erected. In addition to laboratory rooms, it affords space for the display of the mineralogical and geological collections.

The College is also indebted to Mr. Barnum for the larger portion of its zoological collection. This serves to illustrate all groups of the animal kingdom, and is especially rich in skeletons and mounted skins of mammals, the whole being well adapted for the purposes of instruction. The botanical collection consists of an herbarium containing a representation of

the flora of New England, besides many specimens from Europe and the southern and western States. The geological collection contains representatives of the various types of rocks, as well as of fossils from all formations. The mineralogical collection embraces fine examples of most of the species.

The laboratories and lecture-rooms of the department of Geology are in the main Museum building. The geological laboratory is provided with petrological microscopes, instruments for making rock sections, and other instruments. The mineralogical laboratory possesses the apparatus necessary for the determination of minerals, the analysis of ores, and assay work. The biological laboratories are in the newly-erected wing. The laboratory for elementary work is furnished with all necessary facilities, while the laboratories (two in number) for advanced and research work have all the appliances needed for investigation on the lines of anatomy, histology, and embryology.

The Barnum Museum is open for the inspection of visitors from 8.30 A.M., to 5.00 P.M., every day but Sunday.

GODDARD GYMNASIUM

Goddard Gymnasium, the gift of Mrs. Mary T. Goddard, is well adapted to provide the prescribed class and individual work, and to furnish wholesome physical exercise for all. It is fitted with the apparatus usually seen in a good modern gymnasium, including facilities for light and heavy gymnastics, fencing, wrestling, basket ball, base ball, and the many indoor athletic sports. In the offices is a full set of anthropometric instruments for the physical examination of all students. There is a large gallery, with padded running track twenty-four laps to the mile. The dressing rooms, lockers, and baths are well lighted and commodious. The building is heated by steam and lighted by electricity.

The third floor is occupied by the department of Music.

ATHLETIC FIELDS

The old campus is just outside the gymnasium, and on it are tennis-courts, two base-ball diamonds, a foot-ball field, and a

board track. Its close proximity to the Gymnasium is of great advantage.

Tufts College Athletic Field is the large inclosed field on College Avenue, where inter-collegiate contests are played. It includes two base-ball diamonds, a foot-ball field, and a quarter-mile, twenty-foot cinder track, for track athletics. Tennis-courts and a separate gymnasium are provided for women students, not far from Metcalf Hall.

While athletics are encouraged and generously supported by the College, they are made subsidiary to the requirements of the curriculum, thus safeguarding the best interests of the student.

CHEMICAL BUILDING

The building of the department of Chemistry contains laboratories for general inorganic, organic, analytical, and metallurgical chemistry, a large lecture-room, library, and weighing room, and the private laboratories of the professors in charge. The rooms are provided with all the modern laboratory conveniences, and are well supplied with apparatus and chemicals.

ROBINSON HALL

Robinson Hall is a memorial to the late Charles Robinson, and is designed for the use of the Engineering School. It contains the physical and engineering laboratories, a lecture hall, recitation rooms, and offices of instructors. It is lighted throughout by gas and electricity, and heated from an adjoining steam plant by direct and indirect methods.

The Laboratory of General Physics has a floor area of about twenty-five hundred square feet. It is provided with the necessary apparatus for quantitative work in mechanics, sound, light, heat, electricity and magnetism.

The Electrical Testing Laboratories are well equipped for general electric testing. The apparatus includes various makes of ammeters, voltmeters, wattmeters, galvanometers, resistance boxes, bridges, condensers, and standards of resistance, capacity and electromotive force. A storage battery supplies direct cur-

rent at any pressure from two to one hundred and twenty volts, and in addition the testing rooms receive both direct and alternating currents from the Power House, and alternating current from the lines of the Edison Electric Illuminating Company.

Connected with the laboratories is a photometer room of ample size for the photometry of arc and incandescent lamps and provided with apparatus of the latest pattern.

The Transformer Room contains eight new transformers of the General Electric Company; a ten-kilowatt Thomson welder; two five-kilowatt testing transformers, one of ten thousand volts, the other of fifty thousand volts; and a number of smaller and less modern pieces of apparatus.

The Dynamo Testing Room contains a considerable variety of machinery, all electrically driven. Some of the more important machines are a General Electric University Alternator capable of being used as a generator, synchronous motor, or induction motor for one, two, or three phase currents; a high frequency motor generator set with which any periodicity up to one thousand cycles per second can be obtained; two railway motors coupled for testing; two direct-current arc light generators; two and three phase induction motors; a pair of two kilowatt double current generators specially designed for laboratory purposes; and a synchronous motor with phase indicating device.

The Mechanical and Hydraulic Laboratories are in the basement, of which the greater part is above ground, thus assuring good light and freedom from dampness. These rooms contain the testing machines and other apparatus for experimental mechanics, together with the pumps, tanks, and accessories of the hydraulic laboratory.

The Steam Engineering Laboratory contains a small Corliss engine provided with an Admiralty condenser; a 6 x 6 plain slide valve engine used for valve setting and for running a belted air compressor; an oil testing machine; measuring and weighing tanks; apparatus for testing steam engine indicators, gauges and injectors; apparatus for determining the amount of steam or air flowing through orifices; also planimeters, calori-

meters, and indicators of several different makes. The steam engines, gas engine, and the boiler, in the power station, are also arranged and equipped for testing.

A carefully constructed experimental model of the Stevenson Link motion, provided with every possible adjustment, affords ready means for verifying valve diagrams.

THE POWER STATION

The Power Station is equipped with a one hundred and twenty-five horse-power boiler, which supplies heat and power to the engineering buildings. It is also piped and equipped for experimental work in steam engineering; and may be run by forced or natural draft.

The engine room contains a twenty-five horse-power Sturtevant engine directly coupled to a Mordey Alternator; a forty horse-power Harrisburg Standard engine directly coupled to a direct-current General Electric generator; a twenty-five horse-power Buckeye engine with an Alden absorption dynamometer; and a ten horse-power Columbia gas engine belted to a direct current generator. A storage battery of sixty elements furnishes current for lighting, power, and experimental purposes.

An extension of this building provides accommodation for the Forge Shop and Foundry.

BROMFIELD-PEARSON BUILDING

The Bromfield-Pearson Building contains the offices, recitation rooms, lecture and drafting rooms required for conducting the special courses of the Bromfield-Pearson School. It is also equipped for the departments of Drawing and Mechanic Arts in the Engineering School. Abundant and uniform light is provided, and the drafting rooms are separated from the noise and confusion of the shops. The rooms are lighted by electricity from the adjoining Power Station, and power is furnished to the shop from the same source. One end of the building is used exclusively by the pattern, and machine shops, and both are well equipped with modern tools and facilities for conducting the class work in mechanic arts. Electricity from the college plant is used for lighting and power throughout the building.

THE MEDICAL SCHOOL

Faculty of the Medical School*

FREDERICK WILLIAM HAMILTON, A.M., D.D., LL.D.
PRESIDENT — Tufts College

HAROLD WILLIAMS, A.B., M.D., LL.D. . . . . 528 Beacon St.
DEAN, *and Professor of the Theory and Practice of Medicine*

FREDERIC MELANCTHON BRIGGS, A.B., M.D. 31 Massachusetts Ave.
Professor of Clinical Surgery and Secretary of the Faculty

JOHN LEWIS HILDRETH, A.M., M.D., LL.D. . . . 14 Garden St.,
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Professor of Hygiene

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Professor of General Chemistry

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* The names of the Faculty of Medicine, after the President, the Dean, and the Secretary, are arranged so far as possible in the order of academic seniority The post office address is Boston, Mass., unless otherwise indicated.

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Assistant in General Chemistry

LABORATORY ASSISTANTS

Anatomy

LAWRENCE K. KELLEY . . . . . Haverhill
BERNARD C. HEALEY . . . . . Boston
WILLIAM B. GILES . . . . . West Somerville
HAROLD W. MARTIN . . . . . Roxbury
GONZALO ESPEJO . . . . . Merida, Yucatan, Mexico

Physiology

RALPH W. BICKNELL . . . . . Canton, Me.
WILFRED G. FUNNELL . . . . . Fall River
ERLE D. FORREST . . . . . Boston
WILLIS P. MIDDLETON . . . . . Quincy
STANLEY F. DUNCAN . . . . . Quincy

Histology

RUSSELL B. SPRAGUE . . . . . Providence, R. I.

General Chemistry

EDWARD L. MARR . . . . . Malden
JEFFREY J. WALSH . . . . . Fall River
ERNEST J. SMITH . . . . . Ipswich
JOHN H. T. SWEET, JR. . . . . Hartford, Conn.

Medical Chemistry

CYRIL G. RICHARDS . . . . . Roxbury
HAROLD W. EAGER . . . . . Manchester, N. H.
FREDERICK W. O'BRIEN . . . . . Roxbury

Pharmacology

LAMERT OULTON . . . . . Port Elgin, N. B.
JEFFREY J. WALSH . . . . . Fall River
ALBERT W. COLWILL . . . . . Magnolia

OTHER OFFICERS

EDMUND WILBUR KELLOGG . . . . . 24 Milk St., Boston
Assistant Treasurer

HERBERT TRUE BROWN* . . . . . Tufts College
Bursar

*Absent on leave.

EUGENE EVERETT SHEPARD . . . 43 Boston Ave., W. Medford
Acting Bursar

LINA A. MAYO . . . . . Winchester
Stenographer

LILLIAN M. TATTAN . . . . . Somerville
Clerk to Secretary

STANDING COMMITTEES OF THE MEDICAL SCHOOL

The Dean and the Secretary are members of all Committees, *ex officiis.*

ADMINSTRATION. — The President, Drs. Wheatley and Leary

CATALOGUE. — Drs. Arnold, Bates, and Hastings

NOMINATIONS. — Drs. Wheatley and Cotton

LIBRARY. — Drs. Otis, Howe, Cushing, and Hastings (Librarian)

COURSE OF INSTRUCTION. — Drs. Leary, Arnold and Bates

ADMISSION. — Drs. Leary, Dearborn, and Germain

WOMEN'S ADVISORY COMMITTEE. — Drs. Elizabeth A. Riley, Olga Cushing-Leary, and Edna Weil-Dreyfus

Student Government Board

With the intention of increasing the teaching efficiency of the School, and of eliminating, so far as possible, disciplinary relations ordinarily existing between instructor and pupil, a Student Government Board has been tentatively established.

The board is composed of nine members, as follows: the four presidents of the classes in the Medical School; the three presidents of the classes in the Dental School; one member at large for the Medical School, to be chosen by the presidents of the Medical classes; and one member at large for the Dental School, to be chosen by the presidents of the Dental classes. The functions are, at present, chiefly advisory. To it are referred questions of discipline, and general matters relating to the interests of the student body.

The Board for the present year is as follows:—

CHAIRMAN
James B. Bigelow, M '10

SECRETARY
Timothy J. Donovan, D '10

MEDICAL SCHOOL:
Daniel E. Welch, '10
Joseph F. Golden, '11
Philip E. A. Sheridan, '12
John Daly, '13

DENTAL SCHOOL:
Louis A. Haffner, '10
Maurice V. Brown, '11
Richard J. Fitzgerald, '12

Tufts College Medical School

416 Huntington Avenue

Boston, Mass.

The Tufts College Medical School was established in Boston in 1893. Women are admitted upon the same terms as men. Since its establishment its rapid growth is believed to be without precedent in the history of American medical schools. It is now the largest medical school in New England. Three times it has been found necessary to change the location of the School to provide larger laboratory facilities for the constantly increasing number of students. In 1900 it was voted by the Trustees to provide a new building for the combined Medical and Dental departments. Land was purchased upon the corners of Huntington and Rogers avenues and Courtland and Drisko streets, and ground was broken for the new medical school early in the autumn. This building is occupied by the combined Medical and Dental Schools. It is constructed of Jonesport red granite and brick, with terra-cotta trimmings. It contains nearly an acre-and-a-half of floor space; is heated and ventilated throughout by both the direct and the indirect system; and is lighted by electricity. Modern improvements have been introduced in all departments, and no expense has been spared to make it the best-arranged structure of its kind in New England. The building can be reached by all Huntington Avenue Subway cars, except the Roxbury and Dorchester lines.

General Information

CLINICAL ADVANTAGES

Boston, as the largest city in New England, offers unusual facilities to the student of medicine. The amphitheatres of the Boston City Hospital, the Massachusetts General Hospital, the Massachusetts Charitable Eye and Ear Infirmary, are open to

students, and opportunity is thus afforded for witnessing the more extensive surgical operations.

Clinics are held at the Boston City Hospital, Boston Dispensary, Boston Insane Hospital, Carney Hospital, Free Home for Consumptives, Dispensary for Women, House of the Good Samaritan, Massachusetts Charitable Eye and Ear Infirmary, Massachusetts School for Feeble Minded, Massachusetts State Sanatorium for Treatment of Tuberculosis, Mount Sinai Hospital, St. Elizabeth's Hospital, St. Mary's Infant Asylum, Tremont Dispensary, Women's Charity Club Hospital, and at various private clinics.

SESSIONS OF THE SCHOOL

The annual course of lectures begins on the last Wednesday in September of each year, and continues thirty-six weeks until the second Wednesday in June. The annual course of lectures for 1910-11 will commence Wednesday, September 28, 1910, at 3 o'clock P.M.

VACATIONS

There are no exercises at the School during three days at Thanksgiving, a week at Christmas, and the week beginning April 3, 1910, nor upon Washington's Birthday, Patriots' Day and Memorial Day.

OUTLINE OF THE COURSE

The course of study is a graded one, covering four annual sessions. In general the first two years consist of didactic and laboratory work; the last two years are chiefly clinical. During the latter part of the fourth year a certain latitude is allowed in the choice of elective subjects, but the course is otherwise uniform and the required subjects cover thoroughly the general ground of medicine, surgery, and the important special subjects.

For the first three years the school session is divided into two semesters of seventeen weeks each.

First Year

First Semester

Anatomy.—Lectures, recitations, demonstrations, and dissecting. *Twenty-eight hours a week.*

Histology.—Lectures, recitations, demonstrations, and laboratory work. *Nine hours a week.*

Elementary Hygiene.—Lectures. *One hour a week, ten lectures.*

Second Semester

Applied Anatomy.—Lectures and demonstrations. *Three hours a week.*

Embryology.—Lectures, recitations, and laboratory work. *Three hours a week.*

Physiology.—Lectures, recitations, demonstrations, conferences, and laboratory work. *Twenty hours a week.*

General Chemistry.—Lectures, recitations, and laboratory work. *Eleven hours a week.*

Second Year

First Semester

Chemical Pathology and Toxicology.—Lectures, recitations, demonstrations, and laboratory work. *Twenty hours a week.*

Materia Medica and Therapeutics.—Lectures, recitations, and laboratory work in Pharmacology. *Twelve hours a week.*

Second Semester

Pathology.—Lectures, recitations, demonstrations, and laboratory work. *Twenty-five hours a week.*

Bacteriology.—Lectures, recitations, demonstrations, and laboratory work. *Five hours a week.*

The following subjects are given throughout the school year:

Physical Diagnosis. — Lectures, demonstrations, recitations and section exercises. *Forty-eight hours in all.*

Bandaging and Surgical Technique.—Lectures, demonstrations, and section exercises. *Twenty-four hours in all.*

Third Year

The following subjects are given throughout the school year:

Theory and Practice.— Lectures, and recitations. *Three hours a week.*

Surgery.—Lectures and recitations (three hours), and one *clinical lecture. *Four hours a week.*

Obstetrics.—Lectures, recitations, and demonstrations. (Attendance upon at least two cases of labor is required — see "clinics," below.) *Three hours a week.*

Diseases of Children.—One lecture at the school and one *clinical lecture. *Two hours a week.*

*Clinical lectures are given at the hospitals connected with the School. See page 228.

Medical Diagnosis (including preliminary work in Clinical Medicine).— Lectures and recitations (three hours a week), and *clinical lectures (two hours a week). *Five hours a week.*

Hygiene and Sanitation.— Lectures. *One hour a week.* This course gives, in addition, lectures and demonstrations in Sanitary Chemistry. *Sixteen hours.*

Ophthalmology.— *Twenty-four lectures.*

Laryngology.— *Twenty-four lectures.*

First Semester

Neurology.—*One *clinical lecture a week. Sixteen lectures and eight hours of laboratory work* in Neuro-Pathology.

Hematology.—*Sixteen lectures and twenty-four hours of laboratory work.*

Second Semester

Pulmonary Diseases and Climatology.—*One *clinical lecture a week.*

Gynaecology.—Lectures and recitations. *Three hours a week.*

Genito-Urinary Diseases.—*Sixteen lectures.*

CLINICS

In addition to the above exercises, the students of the third year attend clinics, in sections, in the following subjects: —

Clinical Medicine;
Clinical Surgery;
Obstetrics (each student is required to take charge of at least two cases of childbirth);
Pediatrics;
Pulmonary Diseases;
Ophthalmology;
Laryngology

The work in clinics averages *twelve hours a week for the year.*

Each student is required to serve one month as assistant at a clinic in the surgical department, and one month as assistant at a clinic in the medical department of an approved hospital.

Fourth Year

The fourth year is divided into three periods: —

The first period (twelve weeks) ends at the Christmas recess. The second period (thirteen weeks) ends at the spring recess. The third period (six weeks) follows the spring recess.

* Clinical lectures are given at the hospitals connected with the School. See page 228.

The work of this year is essentially clinical, and largely in sections.

The work of the fourth year is required and elective..

The required work includes a continuation of the clinical work in the general subjects of medicine and surgery, and a grounding in the essentials of those specialties which have not been studied in the third year. The most of these special subjects are completed before the Christmas recess.

The elective work is a continuation of the work of the required course along selected lines. The student is required to take a certain amount of work, but may exercise his choice as to what he will elect from a large number of subjects offered.

Required Subjects

Class Exercises

Clinical Medicine (including Pulmonary Diseases).—Lectures and conferences at the School (two hours), and *clinical lectures (three hours). *Five hours a week, thirty weeks.*

Clinical Surgery.—Lectures and conferences at the School (two hours), and one *clinical lecture and operations (two hours). *Four hours a week, thirty weeks.*

General Medicine.—Lectures and recitations. *One hour a week, thirty weeks.*

Abdominal Surgery.—Lectures and recitations. *Three hours a week during first period (twelve weeks).*

Neurology.—One conference at the School and two *clinical lectures each week. *Three hours a week during first period (twelve weeks).*

Psycho-Pathology.—Two lectures at the School and one *clinical lecture. *Three hours a week during first period (twelve weeks).*

Children's Diseases.—Lectures and conferences. *One hour a week during first period (twelve weeks).*

Orthopedic Surgery.—Lectures, recitations, and demonstrations. *Two hours a week during first period (twelve weeks).*

Otology.—*Clinical lectures. *Two hours a week during first period (twelve weeks).*

Rectal Diseases.—Lectures. *One hour a week during first period (twelve weeks).*

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*Clinical lectures are given at the hospitals connected with the School. See page 228.

Electro-Therapeutics.— Lectures. *One hour a week during first period (twelve weeks).*

Clinical Gynecology.—*Clinics (in small sections) *during first and second periods (twenty-five weeks).* Conferences *once a week during second period (thirteen weeks).*

Medical Jurisprudence.—Lectures and demonstrations. *One hour a week during first and second periods (twenty-five weeks).*

Dermatology.—*Clinical lectures. *Two hours a week during second and third periods (eighteen weeks).*

Operative Surgery and Surgical Anatomy.—This course is a sub-division of Clinical Surgery, and consists of lectures, demonstrations, and section work in operations on the cadaver. *Three hours a week for twelve weeks (second and third periods).*

Mental Diseases.—Lectures and clinical visits at hospitals for the insane. *Two hours a week during second and third periods (eighteen weeks).*

Genito-Urinary Diseases. — *Clinics during first period in sections. (*Twenty-four hours — see below.*)*

Clinical Work in Sections

Twelve hours a week are assigned to clinical work in sections throughout the year. This work is given, as far as possible, in close relation to the instruction in each subject, and the time assigned is proportioned to the importance of the subject. The minimum assignment is *twenty-four hours*—in the special subjects of the first period. This is supplemented in the second and third periods by further clinical work in those subjects that the student elects. The clinics in Clinical Medicine and Clinical Surgery extend throughout the year. The other clinics include the subjects of:—

Neurology; Pediatrics; Pulmonary Diseases; Orthopedic Surgery; Abdominal Surgery; Clinical Gynaecology; Otology; Dermatology; Electro-Therapeutics; Genito-Urinary Diseases; Medico-legal autopsies.

ELECTIVE SUBJECTS

Elective subjects are classified according to the amount of time occupied by each course. Twelve hours of lectures or clinics constitute one point. Each student is required to choose 7 points of electives.

*Clinical lectures are given at the hospitals connected with the School. See page 228.

The elective courses for the session 1909-10 are classified as follows:

Orthopedics	4 points	Otology	2 points
Neurology	3 points	Pathological Technique	2 points
Laryngology	3 points	Gastro-Intestinal Diseases	1 point
Clinical Gynecology	2 points	Pulmonary Diseases	1 point
Dermatology	2 points	Operative Obstetrics	1 point
Genito-Urinary Diseases	2 points	Mental Diseases	1 point
Ophthalmology	2 points		

The examination in an elective subject lasts one, two, or three hours, according as the course counts one, two, or three points. Orthopedics (4 points) has a three-hour examination.

Summary of Time

First Year	1268 hours
Second Year	1177 hours
Third Year	1248 hours
Fourth Year	1003 hours
Total	4696 hours

EXAMINATIONS

1. For Entrance

The entrance examinations are conducted at the Medical School building, under the supervision of an officer of the College of Letters. They are given twice during the year. The next Entrance Examinations will be held Monday, June 6, and Monday, September 19, 1910, at 10 o'clock A.M.

2. Promotion

The regular examinations for promotion on the subjects of the First, the Second, and the Third Year, are held at the end of each course.

3. For Graduation

The regular examinations for graduation are held during the Fourth Year at three periods, and follow the termination of each of the three periods into which this year is divided (see page 231). At each of these periods examinations will be held in those subjects, required or elective, which end at that time.

4. Fall Examinations

The regular fall examinations will commence Monday, Sep-

tember 12, 1910, at 10 o'clock A.M., and are given for the following purposes: —

(*a*) For students from other medical schools applying for advanced standing.

(*b*) For the removal of conditions (other than entrance.)

Students intending to take the fall examinations (other than for entrance) are required to notify the Secretary on or before Saturday, Sept. 3, 1910.

In all examinations (except those for entrance) each student must register by signing his name to the registration blank provided for that purpose. If a student fails to register in this manner he shall receive no credit for that examination.

Subjects of Instruction

ANATOMY

The course in anatomy is given throughout the first year. During the first half-year there are five lectures and three recitations weekly with the class. There are also special demonstrations by the instructors in the difficult parts of the work. In the dissecting room each student is required to dissect two parts, to the satisfaction of the Demonstrator of Anatomy, before taking the final examination. It is necessary for every student to dissect three parts before graduation. Record of attendance and of the quality of the work done in the dissecting room will be kept, and will largely determine the standing of the student in the class.

During the second half-year there are three exercises each week, one hour for applied surgical anatomy, one hour for applied medical anatomy, one hour for applied anatomy of special subjects, such as the gross anatomy of the nervous system, of the eye, of the nose, of the throat, etc.

PHYSIOLOGY

The course in physiology is given throughout the latter half of the first year. It constitutes half of the entire work required of the student during that period. The course consists of four recitations, two lectures, six hours of laboratory work, and three conferences for every student, each week, together with the preparation of a technical written paper, and extra demonstrations. At the end of each month there is an important written examination.

In the recitations, familiarity with the subject-matter of an assigned text-book of physiology, and of the syllabus, is required. The lectures set forth the principles of general and descriptive physiology, and suggest some of its relations to the allied sciences, especially anatomy. In the laboratory the stu-

dent has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function, a specialty being made of an acquaintance with the nature of protoplasm. A strict practical examination may be held at the end of the year in the laboratory. The conferences give each student opportunity to become familiar with the literature on important interesting physiological topics, which are then presented in written reports and freely discussed by the whole class. Record both of the attendance and of the quality of the work done in the laboratory and recitation-room will be kept, and, with the conference, will largely help to determine the standing of the student in the class. In addition, a three-hour written examination covering the entire work of the year is held at the completion of the work, besides the important subsidiary written examinations, monthly, and weekly written tests.

A reviewing course in physics as related to physiology, given by the department of physics in the College of Letters, is a part of this course. This year the lectures and demonstrations are given by Professor Harry G. Chase.

Advanced and research work in physiology will be provided for competent students, by special arrangement with the head of the department. Work in this department is also offered to candidates for the degree of Master of Arts. The constant aim is to adapt the work of each student both to his needs and to his capabilities.

GENERAL CHEMISTRY

The course in general chemistry consists of descriptive chemistry and qualitative analysis, with so much of theoretical chemistry as is necessary for a proper understanding of the subject.

The classification of the carbon compounds is also taken up at considerable length, and special reference is made to those which are of interest in the study of medicine. The instruction is by lectures, recitations, and practical work by the students in the laboratory. There are five lectures, two recitations, and six

or more hours of laboratory work for each student, every week. Much attention is given to qualitative analysis for the sake of the valuable training which it imparts, and the knowledge of chemistry which is incidentally gained. The importance of this knowledge is evinced by the fact that it is the only non-professional subject that is required in most medical schools. The aim is to impart such information in chemistry as is necessary to the intelligent physician. At the same time any who wish to pursue the study further than is required of every graduate may do so by special arrangement.

Certificates of satisfactory completion of Chemistry 1, 2, and 3, in the academic department of Tufts College, will be accepted in the Medical School in place of General Chemistry. It is intended to make this course lead directly to the Medical Chemistry of the second year, and it includes much of the preliminary work of that course.

HISTOLOGY AND EMBRYOLOGY

The work in histology covers the first half of the school year, and is both didactic and practical. The practical work in the laboratory is emphasized. Here the student comes into the most intimate relation with the elements of the body, the legitimate objects of his study. He learns to use the microscope and to manipulate sections. Being required to draw what he sees, he forms a mental picture of the objects of study which he never forgets.

The department aims to bring before the student the latest utterance of the best authorities, and to present the subject from the standpoint of the medical student. It must be obvious that histology, dealing as it does with the tissue elements of the body in their normal condition, is vitally important in the study of pathology, when it is understood that it is morbid changes in these elements which constitute pathological conditions. The student's future study of pathology is kept constantly in mind, and the teaching of the department has a direct bearing upon that end.

Embryology will be taught during the second half-year.

There will be three exercises each week, in which the subject will be presented so far as to give the student a knowledge of the origin of the tissues in the embryo, and to furnish him with an understanding of such conditions as will aid him in the study of obstetrics. The department is furnished with microscopes, the use of which, on payment of a small fee, will be afforded to such as are unable to furnish instruments of their own.

Written exercises and recitations will form a part of the course. Ninety hours of laboratory work are required.

ELEMENTARY HYGIENE

During the first half of the Freshman year, elementary hygiene is taught, together with the benefits to be derived from pure and wholesome associations, with the object of developing high moral, mental, and physical qualities.

PHARMACOLOGY

Instruction in pharmacology consists of lectures, recitations, and laboratory exercises, twelve hours a week throughout the first half-year. Especial attention is given to the physiological action of drugs in its relation to their therapeutical application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory course is designed to familiarize the student with all medicinal preparations and processes, and consists of exercises in which the class in sections is led to this result practically.

Prescription writing and the metric system will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

CHEMICAL PATHOLOGY AND TOXICOLOGY

REQUIRED COURSE

The course includes lectures, recitations, demonstrations and practical laboratory work.

Subjects comprise chemistry of urine, feces, gastric contents, blood, bile, saliva, milk, calculi, fats, carbohydrates, proteins,

etc. Special attention is given to the chemistry and microscopy of the urine, feces, and gastric contents. These subjects occupy about one-half the laboratory exercises.

Diagnosis of renal and gastric diseases from chemical and microscopic findings is fully considered in both lectures and recitations.

The lecture and laboratory course in toxicology is comprehensive. Students are required to determine the identity of various poisons in stomach contents and in food.

Written and practical examinations are held at frequent intervals.

OPTIONAL COURSE

Research Work in Physiological Chemistry. Students must obligate themselves to spend at least a half-year, and write a thesis upon the result of their investigation. This course is similar to that given in the Graduate School for the degree of Master of Arts.

PATHOLOGY

The work in pathology and bacteriology will occupy the attention of the students during the second half of the second year. The instruction in pathology will consist of lectures, recitations, demonstrations, and practical laboratory work. It will be the aim to develop in the student a thorough knowledge of the causes, course, and results of pathological processes. Daily lectures (five times a week) will be supplemented by daily recitations, based upon a syllabus covering the subjects of general pathology and special pathology.

Demonstrations of gross pathological specimens, obtained from operations and autopsies at the Boston City Hospital, the Massachusetts General Hospital, and other institutions, will be held frequently, as material is obtained. The supply of fresh material is very large, and it is usually possible to illustrate all of the common disease processes and many of the rare lesions, during the time when the class is at work. The work will include active participation by the students, who will be expected to section, study, and report upon specimens. Instruction in au-autopsy technique will be given in the amphitheatre of the School.

The work in pathological histology will include a three-hour exercise daily, five times a week. Students will mount and make drawings of sections obtained from human and experimental lesions, comprehending all the important subjects of general and special pathology. Considerable attention will be paid to surgical pathology. Preserved gross specimens illustrating the lesions studied will be demonstrated in connection with the laboratory exercises.

Written recitations will be held, without notice, at irregular intervals throughout the term. The standard attained by the student in these exercises will influence his final mark in the subject. Final examinations will be held at the end of the year, three hours of written and two hours of practical work. A report on gross specimens may be included.

Microscopes will be loaned to students for a small fee.

BACTERIOLOGY

Bacteriology is taught as a companion study with pathology. As infectious processes are taken up, the bacterial causes are studied in connection with the pathology of the diseases that they produce, in such a way that a comprehensive view of the cause and effect may be obtained. Attention is paid to the technical details of laboratory work. The methods of bacterial action, the elaboration of toxines, the subject of immunity, and the important bearings of asepsis, antisepsis, and disinfection are especially emphasized. Particular attention is also paid to all practical bacteriological tests used in medicine.

The bacteriological laboratory presents adequate facilities for the intelligent demonstration of this subject. In addition to the usual laboratory work, facilities are afforded students for individual work. In connection with the demonstration of gross pathological specimens, a study of bacteria present is made, both by smear and culture. The recitations in this subject will include both oral and written exercises, and practical examinations will be held throughout the year.

The final examination will consist of two hours of written and one hour of practical work. The practical examination

will consist of the examination of an unknown specimen, requiring the application of a bacteriological test of clinical value.

PHYSICAL DIAGNOSIS

This is an elementary course in the study of physical signs in health and disease, and is the foundation for the study of Clinical Medicine. Special attention is given, in the explanation of physical signs, to the principles of physics, and to the facts of anatomy and physiology upon which they are based. The course follows the instruction in Medical Anatomy, part of the course in Applied Anatomy of the first year, and leads to the course in Medical Diagnosis in the third year. The course consists of one lecture a week throughout the second year (thirty-two lectures), and fifteen exercises in sections, chiefly on elementary percussion and auscultation.

BANDAGING AND SURGICAL TECHNIQUE

Bandaging and surgical technique is given to students of the second year, and consists of practical work in applying bandages, dressings, splints, etc. The course is preceded by lectures and demonstrations by the Demonstrator of Bandaging and Apparatus. Upon the conclusion of the lectures, each student receives individual instruction in the subject, and must show himself skilled in this work before completing the course.

During the second semester a series of lectures will be given upon surgical technique.

The course is a part of the work in Surgery.

THEORY AND PRACTICE OF MEDICINE

The work prescribed in the department of general medicine has been carefully planned. As the studies of the second year are intended to prepare the student for the study of the theory and practice of medicine, so is this course intended to prepare for the clinical courses of the fourth year. To this end a systematic series of lectures is offered, including such general diseases as are not considered in the special courses. Three hours a week are devoted to these lectures. They comprise a detailed description of each of the diseases under consideration. The diseases are discussed upon the uniform plan of a descrip-

tion of the affection, its synonyms, history, cause, pathological changes, symptoms, complications, diagnosis, prognosis, prevention, and treatment. Supplementary to these lectures, a weekly quiz class is held. By such thorough and systematic study of the diseases he is to meet in the clinical work of the fourth year, the student is prepared to appreciate in the fullest degree the varying phenomena of daily practice.

SURGERY

The course in surgery of the third year consists of lectures covering the principles of general surgery, attendance at clinics, recitations, and written quizzes. The instruction in this year prepares the student for the courses of the fourth year in clinical, abdominal, rectal, genito-urinary, gynecological, and orthopedic surgery.

The class attends the lecture in clinical surgery at the Boston City Hospital one morning of each week throughout the school year, and a similar exercise at the Boston Dispensary, one morning each week from October 1 to April 1. At the latter exercise, the time is principally devoted to demonstrating from the case the various conditions which a practitioner meets in general practice. So far as possible, cases are grouped, and one morning of each week is devoted to the consideration of a single subject, with many cases illustrating the condition under discussion.

The class, divided into small sections, attends the regular surgical clinics of the School each week throughout the school year at the Boston City Hospital, the Boston Dispensary, and the Carney Hospital.

At some time after the course in bandaging and surgical technique, but before graduation, each student must present a certificate stating that he has served satisfactorily as surgical dresser for at least one month in some institution approved by the Faculty. All students who have not already taken the course in bandaging must make arrangements with the demonstrator to complete this course before January 1 of their third year.

LARYNGOLOGY

Instruction in the diseases of the nose and throat is both didactic and clinical. A systematic course of lectures is given to the third-year students in the amphitheatre of the School. These lectures are illustrated with colored diagrams, models, pathological specimens, and the exhibition of instruments. The opaque-projection apparatus is used at the close of each lecture.

Clinical instruction in laryngoscopy and rhinoscopy is given to small sections of the class at the Boston Dispensary. This work is required.

An elective course, mainly practical, is given to the fourth-year students during the last half-year. Special attention is paid to the technique of instrumentation, also to general diagnosis and treatment. By the actual examination of cases the student is made familiar with the diseases the family physician is expected to treat. During this course the students see the more important operations of the nose and throat. Practical lectures are given at the School. The class will visit, in sections, the clinics of the Boston Dispensary and St. Elizabeth's Hospital.

NEUROLOGY

The Department of Neurology is under the direction of Dr. Morton Prince, and the courses embrace in their scope required and elective work.

The work of the third year is required and consists of:

(1) Clinical and didactic lectures given at the Boston City Hospital once a week by Dr. Prince.

(2) Lectures on the anatomy, physiology, and pathology of the nervous system are given at the Medical School once a week by Dr. Tower, supplemented with instruction by sections in the laboratory in the microscopical examination of the normal and pathological nervous system.

Both these course are given during the first half of the school year.

OPHTHALMOLOGY

The course in ophthalmology will be of the most practical character possible, being designed to give the general practitioner such knowledge of the subject as is most essential to his practice. The lectures will be given twice a week, the first half of the school year. For clinical work the class will be divided into small sections, preparatory to instruction at the Massachusetts Charitable Eye and Ear Infirmary and the Carney Hospital. The fourth-year elective students will be given personal instruction by all members of the department throughout the school year.

OBSTETRICS

Instruction in obstetrics consists of lectures, recitations, conferences, and clinical teaching. Lectures are illustrated by plates and the use of the manikin. Each student is required to care for at least two cases (clinical instruction being given with one of these), attending them throughout convalescence, and handing in a written report. Some of these reports will be read before the class, and subjected to discussion and criticism by class and instructor.

PULMONARY DISEASES AND CLIMATOLOGY

A chair of pulmonary diseases and climatology was established some years ago, and Dr. Edward O. Otis, Physician to the Free Home for Consumptives, and the tuberculosis department of the Boston Dispensary, formerly president of the American Climatological Association, was elected head of this department. Medical climatology will receive special attention in relation to the climatic treatment of tuberculosis. The methods of sanatorium treatment will be discussed, and one or more sanatoriums visited during the year. "The tuberculosis class," "the day camp," and other modern methods of treating tuberculosis are also given attention.

A limited number of students of the fourth year who desire to assist at the tuberculosis clinic of the Boston Dispensary will have opportunity to do so, and should apply to Dr. Otis. In this department special attention is devoted to pulmonary tuber-

culosis, concerning which instruction is given, both by didactic and clinical lectures, to the students of the third and fourth years. Special clinical instruction, with opportunities for the physical examinations of patients, will be given to the students of the third and fourth classes, in small sections, at the clinic for pulmonary diseases in connection with the Boston Dispensary, and at the Free Home for Consumptives. The detection, treatment, and prevention of pulmonary tuberculosis will be thoroughly studied in this class.

CLINICAL TUBERCULOSIS

A special elective course in clinical tuberculosis is given by Professor Otis during the months of January, February, and March. It will pay special attention to the early stages of the disease, and will deal generally with the diagnosis, prognosis, treatment, and prophylaxis of pulmonary tuberculosis. There will be at least twenty-five clinical exercises, and a required essay, or examination.

GENITO-URINARY DISEASES

The required course in Genito-Urinary Diseases will commence in the second half of the third year, when the didactic lectures in this subject will be given. Clinical instruction will be given during the first half of the fourth year.

GYNECOLOGY

Instruction in gynecology is given both by lectures and clinical teaching. Lectures are given to the third-year students twice a week during the second term. Once a week a quiz is held on the lectures.

DISEASES OF CHILDREN

Instruction in the diseases of children consists of clinical lectures, didactic lectures, individual drill in practical history taking, and physical examination in an out-patient clinic and bedside ward visits. The clinical advantages offered to students in this department are extensive. Examples of nearly all the affections of infancy and childhood are shown, including the rare diseases which are seldom seen outside of the clinics of a large city. An

exceptional opportunity is offered for instruction upon and observation of the contagious diseases in small sections at the Hospital for Infectious Diseases. The clientele at the Children's Department of the Boston Dispensary, at St. Mary's Infant Hospital, at the Tremont Dispensary, and during the summer months on the Floating Hospital, is available for the use of the Department.

MEDICAL DIAGNOSIS

The instruction in Clinical Medicine during the third year is given under the head of Medical Diagnosis. The course continues throughout the third year. Two hours a week at the school are devoted to lectures and recitations. This is supplemented by two clinical lectures at the Boston City Hospital, illustrating the subject. In addition the class, in sections, attends ward visits and medical clinics. An important part of this clinical work is given under the supervision of the Department of Pulmonary Diseases. The work in this course is closely correlated with the course in Theory and Practice.

HYGIENE AND SANITATION

Hygiene and sanitation are taught during the third year. The course includes public sanitation, industrial occupations, house and school construction and inspection, water supply, sewerage systems, disinfection, quarantine, preventable diseases, vital statistics, sanitary codes, and medical ethics.

Students in the third year will be instructed by Dr. Hollis in the chemical and microscopical examination of air, foods, water, and sewage, and demonstrations will be given to show the detail work of public health officers, with the object of qualifying graduates for such positions.

HEMATOLOGY

The course in hematology consists of sixteen lectures and twelve two-hour laboratory exercises, — forty hours in all for each student during the first semester of the third year, — with occasional clinical lectures at the Boston City Hospital. It is

given as a sub-department of Clinical Medicine, and it is the aim to adapt it to the needs of the future practitioner. The lectures deal with diseases of the blood from a clinical as well as from a laboratory standpoint. The first laboratory exercises consist of preliminary instruction in the technique of blood examination, followed by practical work in blood pathology. A permanent collection of some three thousand microscope slides and a number of excellent wall-charts are also available. A laboratory note-book has been prepared, with brief descriptions of technique, and blank pages for drawings, notes, and reports. It also contains the clinical histories of the cases studied in the laboratory.

CLINICAL MEDICINE

The aim of the work in Clinical Medicine is to give the student a practical acquaintance with disease. The instruction in this department begins with Medical Anatomy (part of the course in Applied Anatomy), in the second semester of the first year. Then follow the course in Physical Diagnosis in the second year and the course in Medical Diagnosis in the third year. The fourth-year course in Clinical Medicine is a continuation and farther development of this work.

The instruction consists of two clinical lectures at the Boston City Hospital, one clinical lecture (Pulmonary Diseases) at the Boston Dispensary, and two hours at the School. One of these latter hours is given to conferences on cases which the students have studied, and the other is given partly to instruction in practical therapeutics and dietetics, and partly to exercises in conjunction with the Department of Pathology on clinical pathology, — the clinical and pathological study of actual cases.

In addition, abundant opportunities for clinical study are offered, in ward visits and other medical clinics. This instruction is given chiefly at the Boston City Hospital, the Boston Dispensary, and the Free Home for Consumptives. The work in Pulmonary Diseases in the fourth year is regarded as part of the course in Clinical Medicine.

The marks throughout the various courses of the Department of Clinical Medicine are based on practical work and the report of cases, as well as on written examinations.

CLINICAL SURGERY

The work in clinical surgery for the fourth year consists of lectures, conferences, attendance at clinics and operations.

There is one amphitheatre clinic a week at the Boston City Hospital throughout the school year, at which cases are presented, examined, and fully discussed before the whole class. The material at hand in the Hospital presents in the course of the year opportunity to illustrate a very wide range of general surgery. Two supplementary lectures are given at the School, giving a systematic review of the field of clinical surgery.

Students of the fourth-year class in sections attend the surgical clinics at the Boston City Hospital, the Boston Dispensary, the Carney Hospital, and the Charity Hospital, from October 1 to May 15. At these exercises students examine the various cases and report to the instructor, in this way becoming practically familiar with diagnostic methods. Students in this class also have opportunities of administering ether and assisting at operations.

Working positions as surgical out-patient dressers are open to the students at the City Hospital, Boston Dispensary, and elsewhere, and this opportunity for practical work is taken advantage of by many students. Opportunity is offered for a few picked men to serve as surgical dressers in the house, at the Boston City Hospital, for one or two months during the school year.

Clinical conference cases, two in number, are assigned to each student. Each of these cases must be carefully studied and written out in detail, giving the diagnosis, prognosis, and treatment, and concluding with a thorough discussion of all important points. The most instructive of these papers are selected for reading before the class, and are discussed by both instructor and class. The exercises in clinical conference commence some time after November 1.

PATHOLOGICAL TECHNIQUE

The course in pathological technique is offered to students of the fourth year. It is intended to develop in the student a special familiarity with the diagnostic tests which are used in pathological and bacteriological work. The course will include studies of pathological products from the standpoint of rapid diagnosis, as the preparation of free-hand and frozen sections, together with the rapid celloidin imbedding of fresh tissue; training in methods of description and the preparation of protocols; special bacteriological tests, notably the opsonin test and the preparation of vaccines; the study of agglutination by Wright's method; inoscopy, cytodiagnosis, etc.

This course is expected to be of particular value to students who intend to obtain house-officerships in small hospitals where regular pathological appointments are not made.

ABDOMINAL SURGERY

Instruction is given in abdominal surgery, including appendicitis, hernia, and the major operations on the female pelvic organs, by two lectures and one quiz weekly to fourth-year students during the first term, and by demonstrations on the cadaver, clinical conferences, and attendance of subdivisions of the class at operations.

MEDICAL JURISPRUDENCE

In most institutions instruction in legal medicine is limited to those subjects which prepare the graduate for the work of the medical examiner or coroner, in spite of the fact that only a small number of practitioners ever have opportunity to exercise these functions.

The course which will be offered to the fourth-year class is intended to be broader in scope and it will include:

Instruction in the rights and duties of the physician in court, by Justice William Schofield, of the Superior Bench of Massachusetts.

A study of the legal relations of the physician to the public, to the profession, and to his patients, by Dr. F. J. Keleher, member of the Boston Bar.

Instruction in the duties of the medical examiner, illustrated by practical demonstration of medico-legal cases, by Dr. Leary.

ORTHOPEDIC SURGERY

The work in orthopedic surgery consists of one lecture, four clinics, and one quiz each week of the first half-year, and of two exercises a week at the Carney Hospital during the second half-year, for those electing the subject. One of the clinics of the first half-year is in special orthopedic pathology. The work of the second half-year consists of practical exercises in diagnosis and treatment in the out-patient department, and of ward visits, with opportunity to see the operative work, especially the orthopedic surgery of the adult.

OTOLOGY

Instruction in otology consists of lectures on the anatomy, physiology, and pathology of the ear, at the Massachusetts Charitable Eye and Ear Infirmary. These lectures are illustrated by Politzer's charts of the human ear, models, anatomical specimens of the temporal bone, bone-corrosion preparations, and microscopical sections of the organ of hearing.

Clinical and practical instruction in otology is given to small sections of the class at the close of each lecture. The students witness the examination and treatment of patients, are invited in class sections to be present at the major operations upon the ear, and to accompany the aural surgeon in his daily rounds through the wards.

An elective course for the fourth-year students consists of clinical work at the Massachusetts Charitable Eye and Ear Infirmary and the Carney Hospital.

DISEASES OF THE RECTUM

The course in diseases of the rectum will consist of weekly lectures during the first half-year at the School, and clinical instruction every morning at the rectal department of the Boston Dispensary. Each student will have ample opportunity to examine patients, and in suitable cases to apply treatment. Especial attention will be paid to so-called "office treatment" of this class of diseases.

DERMATOLOGY

The instruction in dermatology will consist of weekly lectures, from January to April. Also, from January to June, there will be three weekly clinics at the Boston Dispensary, where cases of skin diseases will be shown to the class, with an opportunity for each student to examine the cases personally.

GENITO-URINARY DISEASES

Clinical instruction in genito-urinary diseases is given at the genito-urinary department of the Boston Dispensary. All the students of the fourth year are required to attend the clinic in sections permitting individual instruction, during the first semester, and are taught the chief points of modern genito-urinary technique. Students electing this course receive additional instruction in sections during the second semester. As the number of patients attending this clinic is very large, each student has an opportunity to see many cases of genito-urinary diseases and to become familiar with their diagnosis and treatment.

ELECTRO-THERAPEUTICS

The course in electro-therapeutics will consist of twelve lectures, with occasional quizzes. It will include a brief review of the principles of electro-physics, the nature, methods of production, and physiological action of the various forms of electrical energy, together with a brief discussion of their therapeutic uses and limitations.

CLINICAL GYNAECOLOGY

The first essential being the ability to make an exact diagnosis, the students of the fourth-year class, in sections of two students only, are given abundant opportunity to make physical examinations under proper supervision. The daily clinics (morning and afternoon) of the Dispensary for Women; of the Boston Dispensary; the Tremont Dispensary; St. Elizabeth Hospital, and Mount Sinai Hospital provide a course in methods of diagnosis and treatment superior to any other in New England. Adequate provision is also made for students to witness operations in plastic and major pelvic surgery.

Preparation

The work demanded by the first year of the Medical School is severe. It has been found that high-school preparation is frequently inadequate. Hence prospective students of medicine are earnestly advised to pursue at least one year of preparatory study after graduation from the high school and before entering upon distinctively medical studies. They will obtain thus a more thorough grounding, and will also familiarize themselves with the laboratory methods which form the basis of the work of the first and second years of the Medical School.

Tufts College is prepared to give instruction adapted to the needs of such persons. They may enter the College as special students, and it is suggested that the studies most valuable to them are Chemistry, Biology, Physics, English, German, and French. The following is an outline of the studies advised for those who take one year in the College as preparatory to medicine:—

1. Biology 3. Two lectures and four hours of laboratory work each week upon the structure and development of selected vertebrate types. The forms studied in the laboratory are the dogfish, salamander and cat, with some microscopic work on embryos and tissues, and the study of skeletons of several animals.

2. Chemistry 1. Two lectures and six hours of laboratory work each week. The lectures cover general theoretical and descriptive inorganic chemistry. The laboratory work is devoted to the principal elements and their compounds.

3. English 1 and 2. Three hours a week of instruction in composition and rhetoric.

4. German or French.

5. Elective.

TEXT-BOOKS

[For the session 1909-10]

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy.—Gray, Morris, Cunningham, Eisendrath, Haynes's Dissector.

General Chemistry.—Simons's Manual of Chemistry, Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis.

Histology.—Syllabus, Böhm and Davidoff, Stohr, Ferguson, Bailey.

Physiology.—Syllabus, Dearborn's Text-Book of Physiology, Howell, Landois, Verworn, Schäfer, Morat, Hutchison.

Bacteriology.—Syllabus, Muir and Richie, Park, Levy and Klemperer, McFarland, Abbott, Lehmann and Neumann, Sternberg.

DERMATOLOGY

The instruction in dermatology will consist of weekly lectures, from January to April. Also, from January to June, there will be three weekly clinics at the Boston Dispensary, where cases of skin diseases will be shown to the class, with an opportunity for each student to examine the cases personally.

GENITO-URINARY DISEASES

Clinical instruction in genito-urinary diseases is given at the genito-urinary department of the Boston Dispensary. All the students of the fourth year are required to attend the clinic in sections permitting individual instruction, during the first semester, and are taught the chief points of modern genito-urinary technique. Students electing this course receive additional instruction in sections during the second semester. As the number of patients attending this clinic is very large, each student has an opportunity to see many cases of genito-urinary diseases and to become familiar with their diagnosis and treatment.

ELECTRO-THERAPEUTICS

The course in electro-therapeutics will consist of twelve lectures, with occasional quizzes. It will include a brief review of the principles of electro-physics, the nature, methods of production, and physiological action of the various forms of electrical energy, together with a brief discussion of their therapeutic uses and limitations.

CLINICAL GYNAECOLOGY

The first essential being the ability to make an exact diagnosis, the students of the fourth-year class, in sections of two students only, are given abundant opportunity to make physical examinations under proper supervision. The daily clinics (morning and afternoon) of the Dispensary for Women; of the Boston Dispensary; the Tremont Dispensary; St. Elizabeth Hospital, and Mount Sinai Hospital provide a course in methods of diagnosis and treatment superior to any other in New England. Adequate provision is also made for students to witness operations in plastic and major pelvic surgery.

Preparation

The work demanded by the first year of the Medical School is severe. It has been found that high-school preparation is frequently inadequate. Hence prospective students of medicine are earnestly advised to pursue at least one year of preparatory study after graduation from the high school and before entering upon distinctively medical studies. They will obtain thus a more thorough grounding, and will also familiarize themselves with the laboratory methods which form the basis of the work of the first and second years of the Medical School.

Tufts College is prepared to give instruction adapted to the needs of such persons. They may enter the College as special students, and it is suggested that the studies most valuable to them are Chemistry, Biology, Physics, English, German, and French. The following is an outline of the studies advised for those who take one year in the College as preparatory to medicine:—

1. Biology 3. Two lectures and four hours of laboratory work each week upon the structure and development of selected vertebrate types. The forms studied in the laboratory are the dogfish, salamander and cat, with some microscopic work on embryos and tissues, and the study of skeletons of several animals.

2. Chemistry 1. Two lectures and six hours of laboratory work each week. The lectures cover general theoretical and descriptive inorganic chemistry. The laboratory work is devoted to the principal elements and their compounds.

3. English 1 and 2. Three hours a week of instruction in composition and rhetoric.

4. German or French.

5. Elective.

TEXT-BOOKS

[For the session 1909-10]

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy.—Gray, Morris, Cunningham, Eisendrath, Haynes's Dissector.

General Chemistry.—Simons's Manual of Chemistry, Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis.

Histology.—Syllabus, Böhm and Davidoff, Stohr, Ferguson, Bailey.

Physiology.—Syllabus, Dearborn's Text-Book of Physiology, Howell, Landois, Verworn, Schäfer, Morat, Hutchison.

Bacteriology.—Syllabus, Muir and Richie, Park, Levy and Klemperer, McFarland, Abbott, Lehmann and Neumann, Sternberg.

Chemical Pathology and Toxicology.—Ogden's Clinical Examination of the Urine, Purdy's Practical Urinalysis and Urinary Diagnosis, Simon's Physiological Chemistry, Hammarstein's Physiological Chemistry, Abderhalden's Physiological Chemistry, Taylor's Medical Jurisprudence, Peterson and Haines' Legal Medicine and Toxicology, Holland's Medical Chemistry and Toxicology, Wood's Chemical and Microscopical Diagnosis.

Materia Medica and Therapeutics.—Hare, United States Dispensatory, Gerrish's Prescription Writing.

Pathology.—Syllabus, Stengel, Ziegler, Coplin, Mallory and Wright's Technique, Durck's Pathological Histology, Cohnheim, Green, American Text Book.

Physical Diagnosis.— DaCosta's Physical Diagnosis, Ander's Physical Diagnosis.

Children's Diseases—Holt's Diseases of Infancy and Childhood, Kerley's Treatment of Children's Diseases, Cotton's Medical Diseases of Infancy and Childhood, Thompson's Clinical Examination and Treatment of Sick Children.

Gynaecology.—Greig-Smith, Byford, Dudley, Kelly, Reed.

Hematology.—Ewing's Clinical Pathology of the Blood.

Hygiene.—Bergey, Principles of Hygiene; Egbert's Hygiene and Sanitation.

Laryngology.—Coakley, Knight, Kyle, Shurley.

Medical Diagnosis.—Musser's Medical Diagnosis.

Obstetrics.—Hirst, Reynolds, Jewett, American Text-book.

Ophthalmology.—Fuch, Swanzey, May.

Practice of Medicine.—Osler, Tyson, Forscheimer's Prophylaxis and Treatment, Anders's Practice of Medicine, Thompson, Strümpell, Eichhors.

Pulmonary Diseases.—Babcock's Diseases of the Lungs.

Surgery.—Lexer-Bevan, Brewer, International Text-book, American Text-book, Stimson on Fractures and Dislocations.

Clinical Gynaecology.—Dudley, Garrigues.

Clinical Medicine.—Osler's Practice of Medicine, Wood and Fitz's Practice, Ander's Practice of Medicine, Forcheimer's Prophylaxis and Treatment.

Clinical and Operative Surgery. — Brewer, International Text-book, American Text-book, Wharton and Curtis, Roberts, Stimson on Fractures and Dislocations, Scudder on Treatment of Fractures, Binney's Operative Surgery, Treves's Surgical Anatomy.

Dermatology.—Diseases of the Skin by Hyde and Montgomery, Duhring, Stelwagon, Crocker, Kaposi, Besmer.

Diseases of the Rectum.—Kelsey, last edition; Ball, last edition; Tuttle, Gant, second edition.

Genito-Urinary Diseases.—Keyes, Taylor, Morton, Caspar.

Mental Diseases.—Brower and Bannister's Practical Manual of Insanity, Diefendorf's Clinical Psychiatry, Berkely's Mental Diseases, Wood's Reference Handbook, article on Insanity, Clouston's Clinical Lectures on Mental Diseases, Tuke's Dictionary of Psychological Medicine, E. Regis's Practical Manual of Mental Medicine, Outlines of Psychiatry by Wm. A. White.

Neurology.—Oppenheim, Church and Peterson,

Orthopedics.—Bradford and Lovett, last edition.

Otology.—Buck, Politzer and Bennett's System of Diseases of the Ear, Throat, and Nose.

Medical Dictionary.—Gould, Dunglison, Dorland.

Requirements

FOR ADMISSION TO THE FIRST-YEAR CLASS

Candidates for admission to this School, except as hereafter stated, must pass a written entrance examination in English, Algebra, Plane Geometry, Physics, Latin, and one subject to be chosen from the following: American History, Biology, Chemistry, French, or German.

(*a*) English: a composition of two hundred words, to be criticised in relation to expression of thought, construction of sentences, punctuation, spelling, and handwriting. The subjects for the examination in 1910 will be chosen from the following:—

(1) Shakespeare's Merchant of Venice; (2) Thackeray's Henry Esmond; (3) Burke's Speech on Conciliation with America; (4) Scott's Ivanhoe.

Every candidate is expected to have read intelligently all the books prescribed.

(*b*) Algebra: the fundamental operations, factors, fractions, simple equations, simultaneous equations of the first degree, involution and evolution, exponents, and quadratic equations. Texts similar to those of Wells or Wentworth are suggested for study.

(*c*) Plane Geometry.

(*d*) Physics: an examination suited to those who have studied such text-hooks as Gage's Elements of Physics, or Carhast's and Chester's Elements of Physics.

(*e*) Latin: a sight translation of easy Latin, as, for example, simple passages from Cæsar's Gallic War; also the translation into Latin of easy English sentences based on the first fifteen chapters of Book I of the Gallic War.

1. American History: The text-book suggested is McLaughlin's History of the American Nation.

2. Biology: The text-books suggested are Colton, Zoology, Descriptive and Practical; Jordan, Kellogg and Heath, Animals; Kingsley, Elements of Comparative Zoology; Needham, Lessons in Zoology.

3. Chemistry: The text-book suggested is Newell's.

4. German: Kayser and Montesu's Brief German Course, or Edgren and Fossler, or the "first part" of the Joynes-Meissner Grammar, together with some seventy-five pages of easy German from such texts as are commonly read in the first year of the preparatory school, will represent the amount of preparation expected.

5. French: Grandgent's Short French Grammar, or the "first part" of any one of the commonly used grammars, together with about one hundred pages of easy French (as above).

In modern languages the equivalent of one year's study, with four periods a week, is required.

Students who have failed in not more than three of these subjects may be admitted, subject to condition.

Students who have failed to remove their entrance conditions before the beginning of the second year will be catalogued with the first-year class.

The place and dates of the entrance examinations for the session 1910-11 are given on page 234.

EXCEPTIONS.—Graduates of approved colleges or universities, graduates of approved high schools, and students holding Regents' certificates of the State of New York are admitted without examination. Commencing with the session 1910-11 graduates of approved high schools must present satisfactory certificates of proficiency in Latin and Physics.

Advanced Standing

Allowance is made for time spent in the study of medicine in other accredited medical schools, but no credit is given for examinations passed in other schools, except by special vote of the Committee on Instruction.

Students presenting evidence of a course equivalent to the

course in general chemistry given in the first year in this School are regarded as having anticipated this subject, upon passing the fall examination.

PROMOTION

To Second-Year Class

Students who have passed a majority of the first-year examinations, and who have removed all entrance conditions, are admitted to the second-year class. Students are required, however, to have qualified in General Chemistry before they are eligible to the Medical Chemistry of the second year.

To Third-Year Class

Students of the second-year class who have passed all the first-year examinations, and a majority of the second-year examinations, are admitted to the third-year class.

To Fourth-Year Class

Students who have passed all the studies of the first and the second year, and a majority of the studies of the third year, are admitted to the fourth-year class. No other students are admitted to this class, except by special vote of the Faculty.

GRADUATION

For the Degree of M.D.

Candidates for the degree of Doctor of Medicine must have fulfilled the following requirements:—

1. They must furnish certificates that they are twenty-one years of age.

2. The Faculty must be satisfied of their good moral character.

3. They must have attended four full courses of medical study at some accredited medical college, the last of which shall have been at this School as members of the fourth-year class, and no two courses in the same twelve months.

4. They must have passed all the required examinations, and have performed the required amount of laboratory and clinical work.

5. They must have satisfactorily dissected one half of the body, under the direction of a demonstrator of anatomy.

6. They must have paid all fees.

CHANGE OF REQUIREMENTS

The Faculty reserve the right to change all requirements without further notice.

HONORS

Students who have attended four full courses of lectures at this School, and have obtained an average of ninety per cent. in their examinations, shall be eligible to "*summa cum laude*"; and students who have obtained an average of eighty per cent. shall be eligible to "*cum laude*," in connection with the degree received.

STANDING AND CERTIFICATES

At the end of the session a statement of his standing for the year is sent by mail to each student. These certificates must be preserved for future reference. No marks will be sent or credit given to any student who is in arrears with the Bursar.

FEES AND EXPENSES

A matriculation fee of *five dollars* is payable each year.

A charge of *one hundred and fifty dollars* for tuition is payable in advance.

If desired, the tuition may be paid in instalments, in which case an additional charge of five dollars is made, and the fees are then paid as follows: —

First payment: — Five dollars for matriculation fee and seventy-five dollars on account of the tuition, a total of *eighty dollars*, payable at the beginning of the first semester.

Second payment: — Seventy-five dollars, the balance of the tuition, and five dollars, the additional charge, a total of *eighty dollars*, payable at the beginning of the second semester, or before February 1.

There is no charge for anatomical material or for laboratory supplies.

No student will be admitted to the exercises of the first half-

year who has not paid his matriculation fee and at least one-half the tuition, and no student will be admitted to the exercises of the second half-year who has not paid his fees in full.

Students leaving the school have no claim for tuition paid.

Students who have failed twice in a subject are required to pay a fee of five dollars for each subsequent examination in that subject.

POST-GRADUATE FEES

Post-graduate fee for graduates of other schools . .	$150.00
Single course	50.00
Post-graduate fee for graduates of this School . . .	60.00
Single course	30.00
Anatomical material	at cost

The Bursar of the College will be at the School Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from October 1 to June 1.

There are no scholarships connected with the School.

The expenses of living in Boston need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained in the vicinity of the school at from $5.50 to $7 a week. Students will not be allowed to occupy rooms disapproved by the Faculty.

LIBRARIES

The students of this School have free access to the Medical School Library, to the Library of Tufts College, to the Boston Public Library, and to the Boston Medical Library.

The library at the Medical School is open daily from 9.00 a. m. to 5.00 p. m., except Sundays and holidays. This library is intended to provide *text books for reference*, and the latest editions of all text books used in the school are furnished. These cannot be taken from the Reading Room. In addition, the library contains a large number of reference books in general medicine and general surgery, and in all special branches of each. These works are loaned to the student free of charge, and can be taken out. Complete files of various medical journals provide a valuable addition to the school library.

The Boston Medical Library, which is situated near the School, has one of the largest and most complete collections of medical works in existence. It contains not only bound volumes of every important book in medical literature, but also a very extensive collection of monographs and pamphlets on special subjects. All the leading medical journals are on file for inspection. The Boston Medical Library extends its privileges, under certain conditions, free of charge to students of this School. Its rooms are open daily from Oct. 1 to May 31, from 9.30 A. M. to 10.00 P. M., except Sundays and holidays. The hours on Saturdays are from 9.30 A. M. to 6 P. M.

APPLICATIONS

Students who intend to enter the School for the first time must obtain from the Secretary an application blank, which they are required to fill out and return to him. Application blanks will be mailed upon request.

REGISTRATION

Registration is required of all students, each year. *Registration blanks for the session 1910–11 must be filled out and deposited with the Secretary on or before October 8, 1910.*

Registration is conducted at the school building only.

Summer Courses

The following subjects are offered during the summer months:—

PHYSIOLOGY

A course in physiology will be given during the months of June and July by, or under the direction of, the Professor of Physiology. For particulars of the course application should be made to Dr. Dearborn.

HISTOLOGY

A summer course will be given under the direction of the Professor of Histology. Particulars as to the scope of this work, and the fee, may be learned upon application to Dr. Bates.

MEDICAL CHEMISTRY

A summer class in medical chemistry is conducted by Dr. Thorpe. This is a laboratory course, and is given in the laboratory of the department of Medical Chemistry. For further particulars, apply to Dr. Thorpe.

THE DENTAL SCHOOL

Faculty of the Dental School *

FREDERICK WILLIAM HAMILTON, A.M., D.D., LL.D.
PRESIDENT — Tufts College

HAROLD WILLIAMS, A.B., M.D., LL.D. . . . . 528 Beacon St.
DEAN, *and Professor of the Theory and Practice of Medicine*

FREDERIC MELANCTHON BRIGGS, A.B., M.D. . . 31 Mass. Ave.
SECRETARY, *and Professor of Clinical Surgery*

CHARLES PAINE THAYER, A.M., M.D. . . . . Philadelphia, Pa.
Professor of Anatomy, Emeritus

HENRY JABEZ BARNES, M.D. . . . . 429 Beacon St.
Professor of Hygiene

CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree
Professor of General Chemistry

BYRON HOWARD STROUT, D.D.S. . . . . Taunton
Assistant Professor of Operative Technics and Instructor in Anesthesia

EDWARD WALTER BRANIGAN, A.M., D.D.S.
Professor of Clinical Dentistry — 2 Commonwealth Ave.

JOSEPH KING KNIGHT, D.M.D. . . . . Hyde Park
Professor of Prosthodontia

FRANK GEORGE WHEATLEY, A.M., M.D. . . . . North Abington
Professor of Materia Medica and Therapeutics

WILLIAM ELISHA CHENERY, A.B., M.D. . . 222 Huntington Ave.
Professor of Diseases of the Nose and Throat and Instructor in Oral Syphilis

FREDERICK MORTIMER HEMENWAY, D.M.D. . 175 Tremont St.
Professor of Prosthetic Dentistry

GEORGE ANDREW BATES, M.Sc., D.M.D. . . . . Auburndale
Professor of Histology

EUGENE THAYER, A.M., M.D. . . . 2683 Washington St., Roxbury
Demonstrator of Anatomy

* When only street and number are given in the address, the street is in Boston. With the exception of the President, the Dean, and the Secretary, the names are arranged as far as possible in the order of academic seniority.

GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D. 6 Mason St.,
Professor of Physiology Cambridge

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Professor of Pathology and Bacteriology

HARRY HOMER GERMAIN, M.D. . . . . 416 Marlborough St.
Assistant Professor of Anatomy

OTHER INSTRUCTORS

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Instructor in Clinical Dentistry

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Instructor in Prosthetic Dentistry

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Assistant Demonstrator of Anatomy

LUTHER GORDON PAUL, M.D. . . . . 321 Beacon St.
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Instructor in Prosthetic Dentistry

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Instructor in Prosthetic Dentistry

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HARRY HOWARD FLAGG, M.D. . . . . 30 Elm St., Charlestown
Assistant in Physiology

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Assistant in Histology

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Assistant in Orthodontia

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Assistant in General Chemistry and Orthodontia

HARRY WINFIELD PERKINS, D.M.D. . . . . 419 Boylston St.
Assistant in Orthodontia

CHARLES BUTLER WRY, D.M.D. . Broadway and Mountain Ave.,
Assistant in Orthodontia Revere

LABORATORY ASSISTANTS

Anatomy

LAWRENCE K. KELLEY . . . . . Haverhill
BERNARD C. HEALEY . . . . . Boston
WILLIAM B. GILES . . . . . West Somerville
HAROLD W. MARTIN . . . . . Roxbury
GONZALO ESPEJO . . . . . Merida, Yucatan, Mexico

Physiology

RALPH W. BICKNELL . . . . . Canton, Me.
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ERLE D. FORREST . . . . . Boston
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STANLEY F. DUNCAN . . . . . Quincy

Histology

RUSSELL B. SPRAGUE . . . . . Providence, R. I.

General Chemistry

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JEFFREY J. WALSH . . . . . Fall River
ERNEST J. SMITH . . . . . Ipswich
JOHN H. T. SWEET, JR. . . . . Hartford, Conn.

Medical Chemistry

CYRIL G. RICHARDS . . . . . Roxbury
HAROLD W. EAGER . . . . . Manchester, N. H.
FREDERICK W. O'BRIEN . . . . . Roxbury

Pharmacology

LAMERT OULTON . . . . . Port Elgin, N. B.
JEFFREY J. WALSH . . . . . Fall River
ALBERT W. COLWILL . . . . . Magnolia

OTHER OFFICERS

EDMUND WILBUR KELLOGG . . . . . 24 Milk St.
Assistant Treasurer

HERBERT TRUE BROWN* . . . . . Tufts College
Bursar

EUGENE EVERETT SHEPARD . . . 43 Boston Ave., W. Medford
Acting Bursar

LINA A. MAYO . . . . . Winchester
Stenographer

*Absent on leave.

LILLIAN M. TATTAN . . . . . Somerville
Clerk to Secretary

MARY WRIGHT RICHARDSON . . . . . 19 Brighton Ave., Allston
Clerk of the Department of Clinical Dentistry

SARAH ELIZABETH MILLER . . . . . 7 Haviland St.
Clerk of the Department of Prosthodontia

FRANCES WILDER . . . . . 75 Rutland St.
Matron of the Department of Anesthesia and Extraction

STANDING COMMITTEES OF THE DENTAL SCHOOL

The Dean and the Secretary are members of all Committees, *ex officiis*

ADMINISTRATION.—The President, Drs. Branigan and Bates

ADMISSION.—Drs. Leary, Bates, and Dearborn

NOMINATIONS.—Drs. Hemenway and Barnes

LIBRARY.—Drs. Knight and Bates

INSTRUCTION.—Drs. Knight, Branigan, Hemenway, and Bates

CATALOGUE.—Drs. Bates and Dearborn

WOMEN'S ADVISORY COMMITTEE.—Drs. Elizabeth A. Riley, Olga Cushing-Leary, and Edna Weil-Dreyfus

Student Government Board

The members for the current year of the Student Government Board of the Medical and Dental Schools are as follows:—

CHAIRMAN
James B. Bigelow, M '10

SECRETARY
Timothy J. Donovan, D '10

MEDICAL SCHOOL:
Daniel E. Welch, '10
Joseph F. Golden, '11
Philip E. A. Sheridan, '12
John Daly, '13

DENTAL SCHOOL:
Louis A. Haffner, '10
Maurice V. Brown, '11
Richard J. Fitzgerald, '12

Tufts College Dental School

416 Huntington Avenue

Boston, Mass.

The Dental School, formerly the Boston Dental College, became an incorporate part of Tufts College in 1899, under a special act of the legislature. It was incorporated under its former name in 1868, and is a firmly-established dental school of thirty years' standing, with a large and distinguished body of alumni. Its transfer to Tufts College was in consequence of the new anatomical laws of the State, and because it was felt by its former board of trustees that the advance in dental education rendered it desirable that the purely scientific part of its curriculum should be pursued in connection with a medical school.

The course of instruction in this institution embraces three academic years of eight months each. The studies of the first year, and a portion of those of the second year, are given in connection with those of the Medical School. Instruction is by means of lectures, demonstrations, laboratory work, and recitations, in anatomy, physiology, histology, chemistry, materia medica, pathology, therapeutics, bacteriology, principles of surgery, hygiene, theory and practice of dentistry, oral surgery, and in operative, clinical, and prosthetic dentistry, orthodontia, and dental technics.

The infirmary, under the personal direction of the Professor of Clinical Dentistry, assisted by a corps of demonstrators, is open daily through the year, except during a part of June, the whole of July and August, and a part of September. In the abundance and variety of its clinical material it furnishes an unsurpassed opportunity for the study of oral surgery and of dentistry in all its branches.

imparts, and the knowledge of chemistry which is incidentally gained. The importance of this knowledge is evidenced by the fact that it is the only non-professional subject that is required in most dental schools. The aim is to impart such information in chemistry as is necessary to the intelligent dentist. At the same time any who wish to pursue the study further than is required of every graduate may do so by special arrangement.

During the second year this preliminary training in chemistry is followed by lectures, recitations, and laboratory work in dental chemistry. The metals, with their alloys and salts as used in dentistry, the bones and the teeth, the saliva, and the chemistry of the mouth are carefully studied. The high importance of the many applications of chemistry to the dental profession is fully recognized.

PHYSIOLOGY

The course in physiology is given throughout the latter half of the first year. It consists of five recitations, two lectures, and three conferences for every student each week, the preparation of a technical written paper, and extra demonstrations.

In the recitations, familiarity with the substance of an assigned text-book and with the Syllabus is required. The lectures set forth the principles of general physiology, and suggest some of its relations to the allied sciences, especially anatomy. The conferences give volunteers opportunity to become familiar with the literature on interesting physiological topics, which are then presented briefly in written reports and freely discussed by the class. Record both of the attendance and of the quality of the work done in the recitation-room will be kept, and, with the conference, will help to determine the standing of the student in the department. In addition, a three-hour written examination covering the entire scope of the year is held at the completion of the work, besides important subsidiary written examinations monthly.

By thus concentrating attention upon physiology during an adequate period, it is hoped that a thorough and indispensable grounding in the functions of the normal human organism will

be acquired. Advanced work in physiology will be provided for competent students, by special arrangement with the head of the department, the constant aim being to adapt the labors of each student both to his needs and to his capabilities.

HISTOLOGY

The subject of histology covers the first half of the first year. The work during the first half of the allotted time will be identical with that of the students in the Medical School. This part of the subject covers the study of the elementary tissues, treated comprehensively, beginning with their origin in the embryo. Dental histology will be taught during the second year. In this connection particular attention will be given to the study of the minute anatomy of the tooth. The development of the teeth will also receive careful treatment. A training which gives the student a knowledge of the origin and history of the dental germ lays a suitable foundation for the dentist.

The department is equipped with microscopes which, on the payment of a small fee, will be at the service of such as cannot furnish instruments of their own.

ELEMENTARY HYGIENE

During the first half of the Freshman year, elementary hygiene is taught, together with the benefits to be derived from pure and wholesome associations, with the object of developing high moral, mental, and physical qualities.

OPERATIVE DENTISTRY

In operative dentistry the instruction is both didactic and clinical. Lectures are given covering the whole field, familiarizing the student with all known methods, the conditions under which different filling materials are used, and the most approved manipulation of the same. Many lectures are followed by clinics before divisions of the classes, where attendance is obligatory. By this means every detail of the operation is impressed upon the mind of the student. Great emphasis is placed upon the preparation of cavities for filling. Instruction is

further given concerning the pathological conditions of the mouth and the treatment of the same, exposed pulps, inflamed pulps, dead pulps, abscesses, inflammation of the peridental membrane, and allied subjects. Special attention is given to the preparation of cavities for porcelain filling, and the manipulation of the same. Prophylaxis also is taught, under improved systematized methods.

OPERATIVE TECHNICS*

The technical laboratory is situated on the lower floor, and is exceptionally well lighted from three sides. It is equipped with benches having lock drawers for each student, and has power lathe and other implements for convenient use.

Instruction in this course will be by lectures, illustrated by models and drawings, and by practical work on the part of the student. The student's work will include the study of the forms of teeth, with carving in ivory; study of the position and form of pulp chambers and canals, with dissection of teeth; proper methods of treating and filling pulp canals, with operations on extracted teeth. Porcelain inlay work, with practical examples, also proper methods of forming cavities for filling, and the manipulation of all filling materials, will be included.

CLINICAL DENTISTRY

The method of instruction in clinical dentistry is by clinical lectures to the students of each class, accompanied by practical demonstration of various operations on the teeth and neighboring tissues.

Ample opportunity for work in practical operative dentistry is furnished in this department, and the student, by actual practice, receives training in the various dental operations, and in the diagnosis and treatment of diseased conditions of the mouth and teeth.

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* NOTE.—The operations in the technical departments require a very large number of natural teeth, and a sufficient supply is sometimes difficult to get. It will therefore be to the interest of students if they will bring with them all the extracted teeth they can obtain.

PROSTHODONTIA

The instruction in prosthodontia consists of a graded course of didactic lectures to the entire class, illustrated by models and diagrams, on the nature, properties, and manipulation of the various materials used in making artificial dentures, crowns, and bridge-work, preparatory to, and in harmony with, the laboratory work in prosthetic dentistry. These lectures extend through the three years of the course.

PROSTHETIC DENTISTRY

Particular attention is given to practical manipulation of vulcanite, celluloid, aluminum, and cast metal, for dentures; to gold-plate work, to preparation of plate for continuous gum and the application of continuous gum to crown and bridge work, as well as the construction of gold crowns and bridges. The natural form, color, and arrangement of the teeth, together with the entire range of procedure, from taking the impression to the completion of the case and its proper adjustment in the mouth, are thoroughly demonstrated.

ORTHODONTIA

The instruction in the department of orthodontia consists of illustrated lectures dealing with normal development of both temporary and permanent teeth and adjacent tissues, compared with mal-development; also the etiology and treatment of the various deformities of the mouth and teeth.

In addition, the student will be taught the technique and management of practical cases, under the direction of the instructors.

PHARMACOLOGY

Instruction in pharmacology consists of lectures, recitations, and laboratory exercises, twelve hours a week throughout the first half-year. Especial attention is given to the physiological action of drugs in its relation to their therapeutical application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory course is designed to familiarize the student with all medic-

further given concerning the pathological conditions of the mouth and the treatment of the same, exposed pulps, inflamed pulps, dead pulps, abscesses, inflammation of the peridental membrane, and allied subjects. Special attention is given to the preparation of cavities for porcelain filling, and the manipulation of the same. Prophylaxis also is taught, under improved systematized methods.

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inal preparations and processes, and consists of exercises in which the class in sections is led to this result practically.

Prescription writing and the metric system will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

PATHOLOGY AND BACTERIOLOGY

The subjects of pathology and bacteriology will be considered together. This method permits showing the relation of bacteria to the disease processes which they produce. The work will consist of lectures, required laboratory work, and demonstrations. The student is made acquainted with the bacteria of the mouth, and is required to cultivate and study the important organisms. He is expected to carry out experiments to demonstrate the production of artificial caries. The subject of general pathology will be thoroughly covered. The special pathology of the mouth, and of the respiratory and intestinal tracts, will be given particular attention. Inflammation, especially the infectious types, among which are the lesions produced by the pyogenic bacteria, will be carefully considered. The process of repair in soft tissues and bone, and tumors of the mouth and face, are studied from sections of human and experimental lesions, and illustrated by demonstrations of gross specimens. In connection with the study of infectious processes, the specific bacteria will be cultivated and studied. Diseases of the circulatory system are illustrated by lectures and gross demonstrations. The methods of sterilization and their relative efficacy are practically studied, and tests are made of a large series of antiseptic and disinfectant substances.

The pathological and bacteriological department of the School occupies over four thousand square feet of floor space, with a frontage of one hundred and sixty feet. It is excellently lighted. The laboratory furnishes accommodation for one hundred students, and is supplied with all the materials necessary for thorough work.

THEORY AND PRACTICE OF DENTISTRY

The instruction in the theory and practice of dentistry is designed to teach the most advanced scientific discoveries in relation to this art.

It will include such subjects as the action of mouth bacteria, diseases dependent upon dental lesions, dental prophylaxis, oral hygiene, and the ethics of dental practice. The course will be arranged to harmonize with and to supplement the work of the clinical department.

THEORY AND PRACTICE OF MEDICINE

The work in the theory and practice of medicine consists of a series of lectures given to the dental students by members of the Faculty and Board of Instruction of the Medical School. It is intended to include such subjects as general infectious and contagious diseases; syphilis; stomatitis and tonsilitis; diseases of the heart, kidneys, and skin; neuralgia and neurasthenia; disorders of the alimentary tract; pregnancy; tuberculosis. Lectures upon legal medicine and other subjects will be given. It is believed that a course of this description will be of the utmost practical value to dental students, as it will make them acquainted with the nature of a large class of diseases and conditions which they are liable to meet in the practice of dentistry.

HYGIENE AND SANITATION

The Faculty, realizing that the conditions under which the dentist lives and works may be conducive or detrimental to his well-being, has established a course in hygiene and sanitation for students of the third-year class.

The conservation of vital forces that protect from disease; the knowledge of what constitutes pure air, good water, wholesome food, abundant exercise, ample recreation, and how they may be obtained; the vital cause of transmissible diseases, how transmitted and through what portals entrance to the human body is gained, are subjects with which the dentist should be familiar, for his occupation often necessitates close relations with patients suffering from diseases acquired only through

transmission from one person to another. If he is possessed of this knowledge, together with the ability to make a probable diagnosis from plainly manifested symptoms, he may preserve his health, and by simple precautions escape the preventable diseases, especially of the respiratory and alimentary tracts.

SURGERY

The course in surgery consists of a systematic series of lectures covering its principles. These lectures explain the fundamental facts which should be thoroughly understood by all students who propose to treat any portion of the human body. The lectures are not limited to surgery of the mouth, although especial attention is given to this part of the subject, but are intended to give the dental student a sound knowledge of surgery in general.

Asepsis and anesthesia are minutely discussed, and practically demonstrated in the infirmary, in conjunction with the Professor in Operative Technics and Anesthesia. The student is carefully instructed in the administration of ether and of nitrous-oxide gas. In addition to the daily instruction, one morning in each week is devoted wholly to this work, the class being divided into sections. At this weekly demonstration, cases are presented exemplifying the choice of an anesthetic in the particular case. The danger signals of anesthesia are considered, and the proper treatment explained. Local anesthesia receives careful attention, and its limitations are pointed out.

The technic of aseptic and antiseptic methods in dental work is thoroughly explained, and shown in connection with the demonstrations of anesthetics.

ANESTHESIA AND EXTRACTION

The extracting room, a well-lighted apartment, is supplied with all needful instruments and appliances for extracting teeth and for the performance of the simpler operations in surgery. Ample waiting rooms are adjacent, and also rooms for the care of patients after anesthesia. Administrations of nitrous-oxide

gas and ether are made daily. The room is at all times under the personal supervision of the Instructor in Anesthesia.

CLINICAL CONFERENCE

Each clinical conference consists in the reading of an essay upon some practical subject,—the written report of an actual case by a student of the Senior class,—at a meeting of the class presided over by a member of the Faculty. The report is intended to bring out all the features of the case with regard to such topics as its etiology, pathology, and treatment. When possible, the patient will be presented to the class for examination. The case is fully discussed by the members of the class and by the professor in charge.

Requirements

FOR ADMISSION

Candidates for admission to this School, except as hereafter stated, must pass a written entrance examination in the following studies: English, Algebra, Plane Geometry, Physics, and Latin, and one subject to be chosen from the following: American History, Biology, Chemistry, French, or German.

(*a*) English: a composition of two hundred words upon some subject of general interest; the same to be criticised in relation to thought, construction, punctuation, spelling, and handwriting. The subject for this examination in 1909 will be chosen from the following:—(1) Shakespeare's Merchant of Venice; (2) Thackeray's Henry Esmond; (3) Burke's Speech on Conciliation with America; (4) Scott's Ivanhoe. Every candidate is expected to have read intelligently all the books prescribed.

(*b*) Algebra: the fundamental operations, factors, fractions, simple equations, simultaneous equations of the first degree, involution and evolution, exponents and quadratic equations. Texts similar to those of Wells or Wentworth are suggested for study.

(*c*) Plane Geometry.

(*d*) Physics: an examination suited to those who have studied such text-books as Gage's Elements of Physics, or Carhast's and Chester's Elements of Physics.

(*e*) Latin: a sight translation of easy Latin, as, for example, simple passages from Cæsar's Gallic War; also the translation into Latin of easy English sentences based on the first fifteen chapters of Book I of the Gallic War.

(*f*) In addition to the above, the candidate must present himself for examination in *one* of the following subjects:—

1. American History: The text-book suggested is McLaughlin's History of the American Nation.

2. Biology: The text-books suggested are Colton, Zoölogy, Descriptive and Practical; Jordan, Kellogg and Heath, Animals; Kingsley, Elements of Comparative Zoölogy; Needham, Lessons in Zoölogy.

3. Chemistry: The text-book suggested is Newell's.

4. German: Kayser and Montesu's Brief German Course, or Edgren and Fossler, or the "first part" of the Joynes-Meissner Grammar, together with some seventy-five pages of easy German from such texts as are commonly read in the first year of the preparatory school, will represent the amount of preparation expected.

5. French: Grandgent's Short French Grammar, or the "first part" of any one of the commonly used grammars, together with about one hundred pages of easy French (as above).

In modern languages the equivalent of one year's study, with four periods a week, is required.

Students who have failed in not more than three of these subjects may be admitted, subject to condition.

Students who have failed to remove their entrance conditions before the beginning of the second year will be catalogued with the first-year class.

The entrance examinations will be held on Monday, June 6, and on Monday, Sept. 19, 1910, at 10 A.M. They are con-

ducted at the Dental School building, under the supervision of an officer of the College of Letters.

EXCEPTIONS.—Graduates of approved colleges or universities, graduates of approved high schools, and students holding Regents' certificates of the State of New York are admitted without examination.

ADVANCED STANDING

Students who have taken courses in other accredited dental schools are admitted to advanced classes upon presenting satisfactory evidence that they have passed the examinations required for the class they desire to enter.

Students presenting evidence of a course equivalent to the course in general chemistry given in the first year are allowed to anticipate the subject upon passing the fall examinations.

PROMOTION

Students who have passed a majority of the examinations of the first-year class, and all entrance conditions, may be promoted to the second-year class. Students who have passed all the first-year and a majority of the second-year examinations may be admitted to the third-year class.

GRADUATION

Candidates for the degree of Doctor of Dental Medicine must have fulfilled the following minimum requirements: —

1. They must present a certificate that they are twenty-one years of age and of good moral character.

2. They must have attended at least three full courses of lectures in some accredited dental school, the last of which shall have been at this School, and no two courses in the same twelve months.

3. They must have passed all the examinations required, and have satisfied the professors of clinical and prosthetic dentistry of their ability to meet satisfactorily the requirements of the profession.

4. They must have satisfactorily dissected under the direction of a demonstrator of anatomy.

5. They must have paid all fees.

CHANGE OF REQUIREMENTS

The Faculty reserve the right to change all requirements without further notice.

HONORS

Students who have attended three full courses of lectures at this school and have attained an average of ninety per cent. in their examinations shall be eligible to "*summa cum laude*"; and students who have attained an average of eighty per cent. shall be eligible to "*cum laude*" in connection with the degree received.

STANDING AND CERTIFICATES

At the end of the session a statement of his standing for the year is sent by mail to each student. These certificates must be preserved for future reference. No marks will be sent or credit given to any student who is in arrears with the Bursar.

EXAMINATIONS

There are two periods of examination held each year in the school building. Examinations are in writing, and are held at the close of the course in the spring, and previous to the opening of the regular course of lectures in the fall.

The spring examinations are for:—

(*a*) Students commencing the study of dentistry. (See page 285.)

(*b*) Promotion.

(*c*) Graduation.

The fall examinations are for:—

(*a*) Students commencing the study of dentistry. (See page 285.)

(*b*) Removal of conditions in:

1. Previous entrance examinations. (See page 285.)
2. The first-year course.
3. The second-year course.

Students intending to take the fall examinations (other than entrance) *are required* to notify the Secretary on or before September 3, 1910.

The fall examinations for the removal of conditions (other than entrance) will commence Monday, September 12, 1910, at 10 A.M. A detailed list of the subjects in which examinations are given, with the day and hour of each, will be mailed after September 1, 1910, on application.

REGISTRATION AT EXAMINATIONS

In each examination (except those for entrance) students who fail to sign the registration blank provided for the purpose shall receive no credit for that examination..

The examinations in course are as follows:

EXAMINATIONS

First Year. *Finals* in Anatomy, Physiology, General Chemistry, Histology, Operative Technics, and Elementary Hygiene.
Progress in Prosthetic Dentistry and in Prosthodontia.

Second Year. *Finals* in Materia Medica, Pharmacology, Dental Chemistry, Pathology, Bacteriology, and Dental Histology.
Progress in Operative Dentistry, Clinical Dentistry, Prosthetic Dentistry, and Prosthodontia.

Third Year. *Finals* in Oral Surgery, Orthodontia, Theory and Practice, Hygiene, Operative Dentistry, Clinical Dentistry, Prosthetic Dentistry, and Prosthodontia.

TEXT BOOKS

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy.—Gray, Weisse, Quain, Morris, Cunningham, Solatta, McMurrich.

Physiology.— Syllabus, Dearborn's Text-Book of Physiology, Howell, Landois, Verworn, Schäfer, Morat, Hutchinson.

Chemistry.—Simons's Manual, Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis, Mitchell's Dental Chemistry.

Dental Histology and Microscopy.—Syllabus, Stohr's Histology, Tome's Dental Anatomy (latest edition).

Pathology.—Syllabus, Miller's Micro-Organisms of the Human Mouth, Burchard's Dental Pathology.

Hygiene.—Egbert's Hygiene and Sanitation.

Materia Medica and Therapeutics.—Hare, U. S. Dispensatory, Gerrish's Prescription Writing.

Orthodontia.—Malocclusion of the Teeth, Angle (7th edition); Orthodontia, Guildford (4th edition); Internal Anatomy of the Face, Cryer.

Practice of Surgery.—American Text Book, Marshall's Injuries and Surgical Diseases of the Jaws, International Text-book of Surgery.

Dental Science and Operative Dentistry.—Kirk's Operative Dentistry, Garretson's Oral Surgery, Black's Dental Anatomy, Weeks's Operative Technics, American System of Dentistry, Harris's Practice of Dental Surgery, Taft's Operative Dentistry.

Prosthetic Dentistry.—Essig's American Text-book of Prosthetic Dentistry, Richardson's Mechanical Dentistry, Evans's Crown and Bridge Work, Gilbert's Vulcanite and Celluloid.

Bacteriology.—Abbott, Woodhead, Sternberg.

Medical Dictionary.—Dunglison.

FEES AND EXPENSES

A matriculation fee of *five dollars* is payable each year.

A charge of *one hundred and fifty dollars* for tuition is payable in advance.

If desired, the tuition may be paid in instalments, in which case an additional charge of five dollars is made, and the fees are then paid as follows: —

First payment: — Five dollars for matriculation fee and seventy-five dollars on account of the tuition, a total of *eighty dollars*, payable at the beginning of the first semester.

Second payment: — Seventy-five dollars, the balance of the tuition, and five dollars, the additional charge, a total of *eighty dollars*, payable at the beginning of the second semester, or before February 1.

There is no charge for anatomical material or for laboratory supplies.

No student will be admitted to the exercises of the first half-year who has not paid his matriculation fee and at least one-half the tuition, and no student will be admitted to the exercises of the second half-year who has not paid his fees in full.

Students leaving the school have no claim for tuition paid.

Students who have failed twice in a subject are required to pay a fee of five dollars for each subsequent examination in that subject.

POST-GRADUATE FEES

Post-graduate fee for graduates of other schools . .	$150.00
Single course	50.00

Post-graduate fee for graduates of this school . . .	$60.00
Single course	30.00
Anatomical material	at cost

The Bursar of the College will be at the School, Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from October 1 to June 1.

There are no scholarships connected with the School.

The expenses of living in Boston need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained in the vicinity of the school at from $5.50 to $7 a week. Students will not be allowed to occupy rooms disapproved by the Faculty.

OUTDOOR DEPARTMENT

Clinical Dentistry

For many years it has been the custom of the authorities of this School to furnish to certain charitable and penal institutions qualified dentists for the purpose of alleviating cases of actual suffering. Applications for an extension of this service should be made to E. W. Branigan, A.M., D.D.S., Department of Clinical Dentistry, Tufts College Dental School, Boston, Mass.

Prosthetic Dentistry

In a manner similar to the above it has been the custom of the authorities of this School to furnish to the inmates of certain institutions for the aged, at the nominal charge of the cost of materials, artificial teeth and appliances. Institutions desiring to avail themselves of the privilege should apply to F. M. Hemenway, D.M.D., Department of Prosthetic Dentistry, Tufts College Dental School, Boston, Mass.

STATE BOARD EXAMINATION

Students shall not take a State Board Examination in Dentistry previous to the time of final examinations of the third year, without a written permission from the Secretary of the Dental School.

General Information

The Tufts College Dental School is a member of the National Association of Dental Faculties, and conforms to its rules, as well as to those of the National Association of Dental Examiners.

All students must be registered and in attendance within ten days after the commencement of lectures.

LIBRARIES

The students of this school have free access to the Dental School Library, to the Library of Tufts College, to the Boston Public Library, and to the Boston Medical Library.

The library at the Dental School is open daily from 9.00 a. m. to 5 p. m., except Sundays and holidays. This library is intended to provide *text books for reference*, and the latest editions of all text books used in the school are furnished. These cannot be taken from the Reading Room. In addition, the library contains a large number of reference books in general medicine and general surgery, and in all special branches of each. These works are loaned to the student free of charge, and can be taken out. Complete files of various medical journals provide a valuable addition to the school library.

The Boston Medical Library, which is situated near the School, has one of the largest and most complete collections of medical works in existence. It contains not only bound volumes of every important book in medical literature, but also a very extensive collection of monographs and pamphlets on special subjects. All the leading medical journals are on file for inspection. The Boston Medical Library extends its privileges, under certain conditions, free of charge to students of this School. Its rooms are open daily from Oct. 1 to May 31, from 9.30 a. m. to 10.00 p. m., except Sundays and holidays. The hours on Saturday are from 9.30 a. m. to 6 p. m.

SESSIONS OF THE SCHOOL

The annual course of lectures begins on the last Wednesday

in September of each year, and continues until the last Wednesday in May. The annual course of lectures for 1910-11 will commence Wednesday, September 28, 1910 at 3 p. m.

VACATIONS

There are no exercises at the School during three days at Thanksgiving, a week at Christmas, and the week beginning April 3, nor upon Washington's Birthday, Patriots' Day, and Memorial Day.

APPLICATIONS

Students who intend to enter the School for the first time must obtain from the Secretary an application blank, which they are required to fill out and return to him. Application blanks will be mailed upon request.

REGISTRATION

Registration is required of all students, each year. *Registration blanks for the session 1910-11 must be filled out and deposited with the Secretary on or before October 8, 1910.* Registration is conducted at the school building only.

ANNOUNCEMENT

Requests for the annual catalogue, and all other communications relating to the business of the School, should be addressed to the Secretary, FREDERIC M. BRIGGS, M.D., Tufts College Dental School, Boston, Mass.

Summer Courses

The following subjects are offered during the summer months: —

PHYSIOLOGY

A course in Physiology will be given during the months of June and July by, or under the direction of, the Professor of Physiology. For particulars of the course application should be made to Dr. Dearborn.

HISTOLOGY

A summer course will be given under the direction of the Professor of Histology. Particulars as to the scope of this work, and the fee, may be learned upon application to Dr. Bates.

THE BROMFIELD-PEARSON SCHOOL

The Bromfield-Pearson School

BOARD OF INSTRUCTION

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT

GARDNER C. ANTHONY, A.M., Sc.D., DEAN
Professor of Technical Drawing

SAMUEL C. EARLE, A.M.
Professor of English

CHARLES E. STEWART, S.B.
Assistant Professor of Mechanic Arts

GEORGE F. ASHLEY
Assistant Professor of Drawing

PHILIP M. HAYDEN, A.B.
Instructor in French

EDWARD H. CROLL, PH.B.
Instructor in Mathematics.

The Bromfield-Pearson School

The Bromfield-Pearson School is intended to meet the wants of young men whose preparation for an Engineering course may be partially deficient in one or more of the required branches, but whose practice and experience in the applied part of Engineering may qualify them to pursue college work while making up these deficiencies. By this means an engineering education is made possible to those who may have been deprived of the opportunities for obtaining the necessary preparation, or who may have allowed considerable time to elapse between the high school and the college course. A mature mind, industrious habits, and a keen appreciation of the value of the higher education in Engineering are essential qualifications for engaging in this work.

As it is the intention of the Trustees to limit the membership to those earnest and somewhat mature students who cannot afford the time ordinarily required in the fitting school, candidates will not be received from manual training and high schools.

ADMISSION

Students intending to join the School must obtain from the Dean an application blank, which they are required to fill out and return. On receipt of this statement they will be informed as to the conditions of entrance and the program of studies which it will be possible to pursue.

REGULATIONS

Students are subject to all the rules governing members of the College.

All preparatory work must be completed during the year, as no student will be admitted to the School for more than one year.

Students admitted to college classes will be required to obtain a somewhat higher per cent. than the minimum requirement for engineering students.

On the satisfactory completion of the preparatory work students will be given a certificate of admission to the College. They will also receive full credit for all college work done toward a degree.

The President and the Dean have final authority concerning admission, promotion, and discipline.

EXPENSES

The tuition fee is one hundred and fifty dollars a year, payable as follows: seventy-five dollars on or before October 1, and the remainder on or before March 1.

A registration fee of five dollars is charged each entering student, and is payable at the time of registration.

No part of the tuition fee will be refunded to pupils who for any reason withdraw from the school before the close of the term for which the fee is paid.

The cost of table board is from $4.00 to $5.00 per week. Furnished rooms may be had at $1.50 or $2.00 a week. Other expenses vary with the economy of each student. Students living in the College dormitories furnish their own rooms.

The following estimates represent the fixed annual expenses:—

Tuition	$150.00	$150.00
Half-room rent	20.00	91.00
Board, $4.00 to $5.00 a week (36 weeks)	144.00	180.00
Physical training		10.00
Books, instruments, and supplies	15.00	25.00
Total	$329.00	$456.00
Registration-fee, for entering students		$5.00

For other information address GARDNER C. ANTHONY, Dean of the Bromfield-Pearson School, Tufts College, Mass.

The Harpswell Laboratory

INSTRUCTORS

J. STERLING KINGSLEY, Sc.D.
Director, and Professor of Biology

HERBERT V. NEAL
Professor of Biology, Knox College, Galesburg, Ill.

FRED D. LAMBERT, PH.D.
Assistant, and Instructor in Natural History

In 1898 summer instruction in biology was given at South Harpswell, Maine, and in 1901 the college erected a small laboratory at that point, enlarging it in 1902. The location is admirably adapted for biological research, since the fauna of Casco Bay is extremely rich. The laboratory is equipped with boats, dredges, glassware, apparatus, and reagents, for study on the lines of anatomy and embryology. There is also a small library of the most important works.

South Harpswell is two hours by steamer from Portland. It is at the extremity of a narrow peninsula ten miles in length, and has a cool climate. There are several hotels and boarding houses, where board and rooms may be had at five dollars a week and upward.

The Harpswell Laboratory will be open during the summer of 1910, for research work only, under the direction of DR. NEAL.

For circulars and other information concerning the Harpswell Laboratory, inquiries should be directed to PROFESSOR H. V. NEAL, Galesburg, Ill.

DEGREES AND HONORS

1908-1909

Fifty-Third Annual Commencement

June 16, 1909

HONORARY DEGREES CONFERRED

Masters of Arts

Charles Neal Barney
Mabel Irene Emerson
Harry Fay Fister

DEGREES CONFERRED IN COURSE

Bachelors of Arts

Ethel May Aiken (*cum laude*)
Mary Florentia Bogue (*magna cum laude*)
John Grace Boss
Reba May Bush (*summa cum laude*)
Ruth Gertrude Butters
Harry Garfield Chapin (*cum laude*)
Harrison Sumner Coday
Ethel May Cole
Irving Page Colman
Leroy James Cook
Sumner Eastman Darling, Jr.
Lewis Doane
Lois Frances Endicott
Roger Frederick Etz
Ray Dwinell Farnsworth
Gladys Alpha Graves
Genevieve Marie Haven
Gertrude Frothingham Holland
Ernest Rogers Humphries (extra ordinem as of the class of 1908)
Louis Bradford King
Ned Conrad Loud (*summa cum laude*
Maud Myrtle Lunt
Annie Rebecca McCoy
Ray Thomas McDonald
Helen Marie Miller (*magna cum laude*)
Alice Matilda Rich
Henry W Roberts
Harry William Sheehan
Augusta Reddington Sweeney
Dora Hudson Thayer
Arthur Henry Ward
Forrester Blanchard Washington
Abby Ellen Wellman
Henry Cass Whippen
Norbert Wiener (*cum laude*)

Bachelor of Philosophy

George Byron Heath (extra ordinem as of the class of 1899)

Bachelor of Science in Chemistry

Carleton Parker Jones

Bachelor of Science in General Science

Marguerite Sanborn

Bachelors of Science, Medical Preparatory Course

Will Francis Hayes (extra ordinem as of the class of 1906)
Herbert Handy Howard

Bachelor of Mechanic Arts

Herbert Collamore Foss (extra ordinem as of the class of 1894)

Bachelors of Science in Civil Engineering

Ralph Edward Case
Howard Everett Cousins
Lester Fisher Ellis
Charles Howard Getchell
Carl Perry Hubbard
David Bradford Knowlton
William Whipple Michael
George Everett McNayr
Ernest Dunning Read
Alfred Barnard Root, Jr.
Winthrop Sears
John Alfred Tuck (*cum laude*)
Homer Root Turner
Robert Lee Wood

Bachelors of Science in Electrical Engineering

Ralph Edgar Gould
William Miller Hall (*cum laude*)
Laurence Merrill Hemman
William Ellsworth Hooper
Thomas Joseph McCarthy, Jr.
Percy Andrew Mooar
Ernest Raymond Moore
Charles Andrew Robinson (*magna cum laude*)
John Phineas Starrett
Henry Lorenzo Vose

Bachelors of Science in Mechanical Engineering

Frank Binns
Edwin Morey
Walter Leonard Stevens, Jr.

Bachelor of Science in Chemical Engineering

Arthur Griggs Kent

Bachelor of Divinity

Nelson Lyman Lobdell

Doctors of Medicine

Elizabeth Morrison Abbe
James Douglas Alleyne (extra ordinem as of the class of 1908)
David George Azadian
William Bailey
Chester Stoyle Baker (*cum laude*)
William Herbert Blanchard
Winthrop Shirley Blanchard
Arthur Henry Boyden (*cum laude*)
William Francis Brady
Arthur Linwood Brown (extra ordinem as of the class of 1908)
Thomas Francis Capeles
Walter Emery Caswell (*cum laude*)
Harrie Franklin Cleaves (extra ordinem as of the class of 1908)
Walter Livingstone Conwell, Jr.
Domizio Augustine Costa (extra ordinem as of the class of 1908)
James Francis Coupal, B.S.
Frank Wallis Crawford (*cum laude*)
Walter Hiram Crosby (extra ordinem as of the class of 1908)
Thomas Roche Donovan
Jessie Anderson Dow
Joseph Henry Fay (extra ordinem as of the class of 1908)
William Thomas Frawley
Edward Boston Frisbee
Herbert Franklin Gerald (*cum laude*)
Charles Francis Gormly

Jay Perry Graham
Will Francis Hayes, B.S.
John Franklin Holmes
James Albert Honeij (extra ordinem as of the class of 1908)
Leon Webster Jessaman
Catherine Rose Kelley (*cum laude*)
Arthur Wight King (extra ordinem as of the class of 1908)
George Clifford King
Edward Allen Knowlton, B.S.
Mette Marie Knudson
Henry Orlando Lacey (extra ordinem as of the class of 1908)
Charles Bernard Lewis
Coval Henry Liverpool (extra ordinem as of the class of 1908)
Thomas Franklin Mayo
John Edward McCartin (extra ordinem as of the class of 1908)
Alexander John McRae (*cum laude*)
George Fremont Miller (extra ordinem as of the class of 1908)
Koki Minagawa (extra ordinem as of the class of 1908)
Howard Dykeman Mitchell
Edward James Monahan
Francis Vincent Moore
Benjamin Frank Murray
Alfred Winthrop Myrick
James Zuslofsky Naurison (*cum laude*)
Patrick Henry O'Connor (*cum laude*)
Edward James O'Rourke
John Laurence O'Toole (extra ordinem as of the class of 1908)
Mortimer Harwood Paine
George Emory Pariseau (*cum laude*)
Harold Francis Parker
Charles Eugene Perry
Philip Wilfred Place
Arthur Scott Reebel (*cum laude*)
Herbert Augustus Rice (extra ordinem as of the class of 1908)
Carl Webber Rosenbloom
John Edmunds Runnells
Helen Christine Scorgie, A.B.
George Henry Scott
Edith Rogers Spaulding
John Doliver Spaulding
Andrew Joseph Sullivan
Patrick Joseph Sullivan
Fred Bowers Taylor
George Pierce Towle
William Kenneth Turner
Gordon Brooks Underwood
Leslie Thorning Vinal, A.B.
Harold Lowe Wallace (extra ordinem as of the class of 1908)
Clement Plummer Westcott
Edmund Vincent Whelan
George Arthur White
John Robert White

Doctors of Dental Medicine

Alfred Tevis Blowe
William Henry Boland (extra ordinem as of the class of 1908)
Nathaniel Woodbury Bragdon
Walter Clayton Brayshaw
Walter Emerson Briggs
Charles Joseph Burns
LeRoy Æli Burr
Matthew Francis Carney
Earl Alvarez Carvill (extra ordinem as of the class of 1908)
Earl Erskine Chadsey
Nathan Nason Cohen
Walter Edward Copithorn
James Elliott Cox
Harold Duncan Darling (extra ordinem as of the class of 1908)
John Edward Dexter (extra ordinem as of the class of 1908)

Andrew Francis Donlan
Edward John Donovan
James J Duddy
Haller Boynton Eames
George Washington Ellison, Jr.
Grace Chandler Emery
Joseph Nicholas Finney
Cormick Vincent Gallagher (extra ordinem as of the class of 1908)
Ernest Willoughby Gates
Joseph Cornelius Gethro
Charles Philip Haven
Anna Veronica Hughes
John Eugene Keefe
Herman Leroy Keene
Charles Arthur LeClair
Joseph Levy
Rupert Scott Lovejoy
Frederic Archibald MacKinnon
Joseph Aloysius Mahoney
Edmund James McNally
James Johnston McVey
Harold Eaton Mongovan
James Francis Murphy
Waldo Hill Murray
Harry Winfield Perkins
Leslie Duane Priest (extra ordinem as of the class of 1908)
Joseph Herbert Howard Rice (extra ordinem as of the class of 1908)
Alfred Gordon Richburg
Catherine Agnes Rowe
Ralph William Sawyer
Daniel Lawrence Saxton (extra ordinem as of the class of 1908)
Roy Churchill Skinner
Harold Earle Smith
Norman Spencer (extra ordinem as of the class of 1908)
Carl Wyman Stegmaier
Hyman Bernard Swig
John Francis Turner
Schuyler Richard Waller
Julius Samuel Weinstein
Leon Jesse Wells
Frederick Blair Wheaton
Charles Butler Wry
Leonard Deleston Young

Doctors of Dental Medicine in Post-Graduate Course

George Cook Ainsworth
John Winslow Bailey
Alpheus Roberts Brown
Thomas William Clements
Harry Edward Cutter
George William Day
William Price DeWitt
James William Devlin
Agnes Gertrude Kelley
Arthur Lincoln Miles
Frederick Albert Sawyer
Louis Whitney Scott
George Brenton Squires
Ross Vroom
Sumner Permenter Willard
Robert William Young

Masters of Arts

Ray William Clough, A.B., '08 (Chemistry)
Thesis: The Utilization of a Waste Product
Alexander Dillingham, A.B., '07 (Mathematics)
Thesis: Polar Curve Tracing
Frida Emilie Ungar, A.B., '07 (Political Science)
Thesis: A Study of Absence in Industry in Relation to Benefit Associations

Commencement Parts

John Alfred Tuck, Cand. B.S.: "The Ideals of an Engineering Education"

Chester Stoyle Baker, Cand, M.D.: "The Healing Power of Suggestion"

Reba May Bush, Cand. A.B.: "Music in America from the Standpoint of Foreign Influence"

Walter Emerson Briggs, Cand. D.M.D.: "Dental Hygiene"

Ned Conrad Loud, Cand. A.B: "The Undercurrents of History"

Honors

Mary Florentia Bogue (English)
Reba May Bush (French)
Ned Conrad Loud (History and Public Law)
Helen Marie Miller (Greek)
Charles Andrew Robinson (Electricity)

Honorable Mention

Ethel May Aiken (History and Public Law)
Reba May Bush (Music)
Harry Garfield Chapin (Political Science)
William Miller Hall (Electricity)
Ned Conrad Loud (Philosophy)
John Alfred Tuck (Civil Engineering)
Norbert Wiener (Mathematics)

Awards of Prizes, 1908-1909

Goddard Prize in Greek

GLADYS MARION ADAMS

Goddard Prize in Mathematics

ALBERT WILLIAM DAVIS

Scholarship of the Class of 1882

EVERETT WESLEY IRELAND

Scholarship of the Class of 1898

SIGNA ELEANOR BYORKMAN

Greenwood Prize Scholarship in Oratory

EDITH MARION STURTEVANT

Moses True Brown Scholarship

FORRESTER BLANCHARD WASHINGTON

Alpha Omicron Pi Scholarship

GLADYS MARION ADAMS

Rhetorical Prizes

First Prize

GLADYS ALPHA GRAVES

Second Prize

FORRESTER BLANCHARD WASHINGTON

Third Prize

ERNEST SIGFRED SWENSON

REGISTER OF STUDENTS

Graduate School

Resident Students

AVERILL, HARVEY EASTMAN — *Barre, Vt.* — Curtis, 6
A.B., 1908 Second Year History and Public Law

BOGUE, MARY FLORENTIA — *Tufts College* — *29 Capen St.*
A.B., 1909 First Year Ancient Languages

COOK, LEROY JAMES — *Winthrop* — A T Ω House
A.B., 1909 First Year Modern Languages

CROLL, EDWARD HENRY — *Buffalo, N. Y.* — 93 Newbury St., Boston
Ph.B. (Yale), 1909 First Year Engineering

LAMBERT, MARY INGALLS — *Tufts College* — *16 Dearborn Rd.*
A.B., 1900 Third Year English

TENNEY, RUTH — *W. Somerville* — *11 Whitfield Rd.*
A.B., 1904, A.M., 1906 Second Year History and Public Law

VOGT, DAYTON GEORGE — *Buffalo, N. Y.* — Paige, 22
A.B., 1908 First Year Economics

Non-Resident Students

CHADWICK, HENRI FRANCIS — *Wilkinsburg, Pa.* — *746 Penn. Ave.*
B.S., 1900 First Year Engineering

CLARK, CHARLES BROOKS — *West Point, N. Y.* — U. S. Military Academy
B.S., 1897 Second Year Engineering

PEARSON, GEORGE EDWARD — *W. Somerville* — University of Maine, Orono, Me.
A.B., 1904., A.M., 1905 Fifth Year History and Public Law

Courses in Arts and Sciences

[In the following list the course pursued by each student is indicated by the Italic letters immediately following the name. The signs used are as follows: courses leading to the degree of A.B., *ab*; to the degree of S.B., — in Civil Engineering, *ce*; in Electrical Engineering, *ee*; in Mechanical Engineering, *me*; in Chemical Engineering, *ch e*; and in the first year of the Engineering Courses, before the differentiation of studies, *e*; to the degree of S.B., through the Science Courses, — in General Science, *sc*; in Biology, *bi*; in Chemistry, *ch*; and the Medical Preparatory, *mp*.

The third column records the home address. The fourth column gives the address at Tufts College, unless the street is printed in Italics, in which latter case it is a part of the home address.]

Senior Class

Adams, Gladys Marion	*ab*	*Tufts College*	*36 Emery St.*
Adams, John Alden	*ee*	*Hartford, Conn.*	Θ Δ X House
Allen, Richard Congdon	*ee*	*Quincy*	Δ Υ House
Baker, Crosby Fred	*ch*	*Pemaquid Harbor, Me.*	West, 12
Bohlin, Oscar Clemens	*ce*	*Tufts College*	*15 Bellevue St.*
Burgess, Harold Thomas	*ce*	*Meriden, Conn.*	Α Τ Ω House
Burnham, Helen Stanley	*ab*	*W. Newbury*	Metcalf, 11
Burt, Harry Arthur	*ab*	*Taunton*	Dean, 1
Byorkman, Signa Eleanor	*ab*	*Hartford, Conn.*	Metcalf, 8
Chandler, Elsie May	*ab*	*Peabody*	Metcalf, 9
Chase, Leo Waldemar	*ee*	*Lowell*	Paige, 32
Conn, Chester Ingalls	*ce*	*Woburn*	*635 Main St.*
Currie, Annie Morinda	*ab*	*W. Somerville*	*15 Campbell Pk.*
Curtis, Leslie Forrest	*ee*	*Assinippi*	Ζ Ψ House
Cushing, Charles Dunn	*ee*	*Houlton, Me.*	Δ Υ House
Daley, Carroll Thomas	*ch*	*Marlboro*	West, 3
Dolbear, Benjamin Leslie	*ee*	*Tufts College*	*134 Professors Row*
Douglas, James Earl	*ce*	*Hull*	West, 22
Ellis, Gilbert Everett, Jr.	*ee*	*E. Brewster*	West, 28
Ellis, Roys Arthur	*ee*	*Detroit, Mich.*	Ζ Ψ House
Fessenden, Edward Everett	*ab*	*Kingston, N. Y.*	Θ Δ X House
Fosdick, Genevieve Louise	*ab*	*Somerville*	*17 Grand View Ave.*
Francis, Roy William Thompson	*ee*	*Everett*	10 Fairmount St.
Fuller, George Prescott	*ch*	*Medford*	*7 Alfred St.*
Glidden, Bernice Evelyn	*ab*	*Medford*	*25 Emerson St.*
Gordon, Frank Vincent	*ch e*	*Everett*	*13 Paris St.*
Gray, Walter Fairfield	*sc*	*Somerville*	Δ Τ Δ House

Hamilton, Guy	*ab*	*Tufts College*	Θ Δ Χ House
Hansen, Edwin Henry	*ee*	*Brockton*	West, 10
Hatch, Prentice Manning	*ee*	*W. Somerville*	*152 Powder House Blvd.*
Heap, Samuel James	*ce*	*Hartford, Conn.*	West, 22
Hopkins, Levi Thomas	*ab*	*Truro*	West, 12
Houston, Henry Clinton	*ce*	*Methuen*	Paige, 6
Hulen, George Sanborn	*ee*	*Cliftondale*	Δ Τ Δ House
Jones, Marion Marble	*ab*	*W. Somerville*	*1247 Broadway*
Kimball, Robert Samuel	*ee*	*Nashua, N. H.*	Δ Τ House
Knight, Robert Mossman	*ab-ee*	*Tufts College*	*114 Professors Row*
Lamb, Leonard Illman	*ce*	*Attleboro*	Δ Τ House
Leavitt, John Henry	*ee*	*W. Somerville*	*14 Cutter Ave.*
Leonard, Helen May	*ab*	*Stoughton*	Metcalf, 1
Lincoln, Raymond Gilbert	*ab*	*Hartford, Conn.*	Θ Δ Χ House
Mailey, John Bruce	*ce*	*Lynn*	*20 Howard St.*
Mason, Harold Elliot	*me*	*N. Andover*	Curtis, 9
McLeod, Walter Rufus	*ee*	*Boston*	West, 11
Merchant, George Edward, Jr.	*ce*	*Gloucester*	Σ Τ Α House
Miller, Harold DeCarterette	*ee*	*Wakefield*	Α Τ Ω House
Morrison, Louise Augusta	*ab*	*Arlington Heights*	*88 Westminster Ave.*
Morrison, William, Jr.	*ee*	*Lawrence*	Σ Τ Α House
Morrison, William Harrison, Jr.	*ce*	*Nashua, N. H.*	West, 28
Murrill, John Jeremiah	*ee*	*Rockland*	Δ Τ Δ House
Penniman, Ralph Wentworth	*ab*	*Peabody*	West, 12
Rextrow, Jennie Mildred	*ab*	*N. Andover*	Start, 6
Reynolds, James Alfred	*ee*	*Somerville*	*21 Dana St.*
Sanders, Ephraim Ericson	*ce*	*Sweden*	Σ Τ Α House
Sargent, William Andrew	*ab*	*Bradford, Vt.*	Paige, 15
Savage, Sidney Leroy	*ee*	*W. Somerville*	*27 Rogers Ave.*
Seabury, Ada Bond	*ab*	*Yarmouth, Me.*	Start, 1
Segitz, Amy Derby	*ab*	*Medford*	*224 Salem St.*
Simmons, Ralph Marquis	*ce*	*W. Somerville*	*406 Highland Ave.*
Smith, Ada Louise	*ab*	*Franklin*	Metcalf, 10
Smith, Ruel Howard	*me*	*Attleboro*	Α Τ Ω House
Snow, Frederick Orren, Jr.	*me*	*Winchester*	*39 Forest St.*
Soper, Cleveland Conner	*ee*	*Hartford, Conn.*	Α Τ Ω House
Stanford, Walter Smead	*ce*	*Shelburne Falls*	Σ Τ Α House
Swartz, Leslie	*ce*	*Wellesley*	West, 16
Taylor, Chester Warren	*ee*	*So. Yarmouth*	Paige, 17
Tolles, Irving Hart	*ee*	*Terryville, Conn.*	Δ Τ Δ House
Towsley, Prentice Williams	*ce*	*Washington, Vt.*	Δ Τ Δ House
Wales, Winthrop Lodge	*ce*	*Hyde Park*	Δ Τ House

Whippen, Henry Cass, A.B., '09	*ce*	*Kingston, N. H.*	West, 28
Whitney, Elmar Hursh	*ee*	*Somerville*	Paige, 34
Whitney, Frederic Percy	*ce*	*Somerville*	*109 Bartlett St.*
Wood, Effie Marie	*ab*	*Mattapoisett*	Metcalf, 10
Woods, George Rice	*sc*	*Portsmouth, N. H.*	Δ T House
Zion, Samuel	*ce*	*Boston*	Curtis, 7

Junior Class

Amsden, Clifford Neal	*ce*	*South Boston*	Dean, 14
Anderson, Frank William	*ee*	*Meriden, Conn.*	West, 27
Atwood, Byron Trafton	*ce*	*Salem*	West, 18
Bachelder, Charles Albert	*ee*	*Dorchester Centre*	*116 Evans St.*
Baker, Gladys Louise	*ab*	*Provincetown*	Metcalf, 4
Bartlett, Lewis William	*ce*	*Dalton*	Σ T A House
Bickford, Katharine Neal	*ab*	*Danvers*	Start, 3
Blyth, Alexander Watt	*ce*	*W. Somerville*	*400 Highland Ave.*
Bray, Hubert Evelyn	*ab*	*Yarmouth, England*	Paige, 12
Brown, Minot Joseph	*ab*	*W. Somerville*	*11 Morrison Place*
Browne, Wolstan Elliot	*ce*	*Abington*	Δ T House
Cahoon, George Winthrop	*ab*	*Taunton*	West, 25
Chapman, Fred Ingalls	*ee*	*Marblehead*	West, 20
Coldrick, Frank Meloon	*ee*	*Tufts College*	*81 Quincy St.*
Cosgrove, John William, Jr.	*ab*	*Medford*	*87 Otis St.*
Couillard, George Ellis	*me*	*Roxbury*	Paige, 20
Dittrick, Clarence Hoffman	*ee*	*Hudson, O.*	Paige, 24
DuBroy, Arthur Louis	*ee*	*Cleveland, O.*	Paige, 24
Duffey, Audrey Lovejoy	*ab*	*Medford*	Metcalf, 14
Dunn, Joseph Brickley	*ce*	*Dorchester*	Δ T House
Dustin, Charles Ernest	*ce*	*Dexter, Me.*	Δ T House
Edmonstone, William Mathias	*me*	*Everett*	*28 Dean St.*
Fullerton, Robert Smith	*ab*	*Roxbury*	*9 Wayne St.*
Gavin, John Harrison, Jr.	*ab*	*Boston*	West, 11
Granger, Laura Lucina	*ch*	*Winsted, Conn.*	Start, 7
Gray, Bernard Elbert	*ce*	*Medford*	*148 High St.*
Gray, Howard Allison	*ce*	*Somerville*	West, 2
Greenwood, Talma Temple	*ee*	*East Templeton*	90 Bromfield Rd.
Gurney, Elmer Augustus	*ch*	*Marion*	Σ T A House
Haley, James Joseph	*ce*	*Lowell*	Curtis, 11
Hall, George Laird	*ce*	*Somerville*	Δ T House
Haverley, Raymond	*ce*	*Greenwich, N. Y.*	Curtis, 8
Hearsey, Evelyn	*ab*	*Gleasondale*	Metcalf, 4
Hemenway, Russell Gibbs	*ch e*	*Newton Centre*	West, 10
Houghton, Mark Howard	*ce*	*Boston*	West, 18

Hussey, Harold Dudley	*ce*	*Danvers*	East, 1
Ireland, Everett Wesley	*ee*	*W. Somerville*	*28 Appleton St.*
Jackson, Leroy Greenwood	*ch*	*Marlboro*	West, 6
Kinsman, Osgood Stevens	*ce*	*Cambridge*	Α Τ Ω House
Knight, Sue Levina	*ab*	*Westmoreland, N. H.*	Metcalf, A
Lasnier, Gilberto	*ee*	*Montevideo, Uruguay*	45 St. Botolph St., Boston
Little, William Parker	*ee*	*Willimantic, Conn.*	Θ Δ Χ House
Lowell, James Brower	*ce*	*Somerville*	Δ Τ Δ House
MacCurdy, Elmo Douglas	*ch*	*Somerville*	West, 4
MacKay, James Calvin	*ee*	*Waltham*	East, 8
MacPhie, Elmer Ira	*mp*	*Winchester*	Δ Τ Δ House
Mann, Joseph Frederick Thiele	*ee*	*Boston*	Δ Υ House
Marshall, Lawrence Kennedy	*ce*	*W. Medford*	West, 29
McClintock, Paul	*ee*	*Chelsea*	West, 24
McCollester, Parker	*ab*	*Detroit, Mich.*	Dean, 1
McLane, Allen Friend	*ce*	*Roxbury*	Dean, 14
Mergendahl, Charles Henry	*ce*	*Tufts College*	*9 Bellevue St.*
Moffitt, Harold Eugene	*ab*	*Malden*	Paige, 10
Morton, Joseph Webster	*ab*	*Somerville*	*33 Pearson Rd.*
Mulry, Mary Stanton	*ab*	*Methuen*	Metcalf, B
Neagle, Russell Jewett	*ee*	*Medford*	*52 Bradshaw St.*
Nelson, Harold Arthur	*me*	*Mentone, California*	West, 13
Prentiss, Charles Goodwin	*ab*	*S. Boston*	West, 9
Redshaw, Joseph Gaunt, Jr.	*ch*	*Lynn*	West, 3
Richert, George David	*ab*	*W. Medford*	East, 27
Ritschy, Donald Percy	*ce*	*Brooklyn, N. Y.*	Α Τ Ω House
Robinson, Willis Brainard	*ab*	*Hingham Centre*	West, 1
Sawyer, Mildred Beatrice	*ab*	*Malden*	*22 Baker St.*
Shepard, Bertha Maria	*ab*	*Everett*	Metcalf, 15
Shorley, Marion Christine	*ab*	*Winthrop*	*19 Bellevue Ave.*
Skillin, Fred Burgess	*ce*	*W. Somerville*	*37 Burnside Ave.*
Stevens, Harold Francis	*ee*	*Medford*	*87 Marshall St.*
Sturtevant, Edith Marian	*sc*	*Lexington*	*3 Hancock Ave.*
Sullivan, Daniel Maynard	*ce*	*E. Boston*	West, 13
Thibodeau, Earle Thomas	*ab*	*Norway, Me.*	26 West St., Medford
Thompson, Leonard Shute	*ab*	*Malden*	Paige, 8
Thorndike, Allston Kinsley	*ce*	*Medford*	West, 16
Towne, Edward Martin	*ee*	*Andover*	East, 8
Tripp, Augustus Benjamin	*ce*	*Somerville*	*67 Wallace St.*
VanDemark, Ernest Snyder	*ce*	*High Falls, N. Y.*	West, 6
Vincent, Max Golden	*ee*	*Girard, Pa.*	Dean, 13
Wallace, Earle Sessions	*ch e*	*Pasadena, Cal.*	Paige, 6
Waterman, Grace Carpenter	*ab*	*Tufts College*	Metcalf, C

Whitcomb, Ernest Read	*ab*	*Somerville*	*358 Broadway*
Whitney, Carrol Nathan	*ch e*	*W. Somerville*	West, 2
Wilbur, Gladys Maude	*ab*	*S. Framingham*	Metcalf, 7
Williams, Clifford Elliot	*ce*	*Willimantic, Conn.*	18 Fairmount St.
Williams, Charles Hermon	*ce*	*Salem*	Curtis, 8
Willis, Ralph Loring	*ch*	*Three Rivers*	Dean, 13
Winship, Sylvanus Davis	*ce*	*Auburn, Me.*	Curtis, 11
Wise, Russell Perin	*ee*	*West Newton*	Θ Δ X House

Sophomore Class

Anderson, Arthur Julius	*ce*	*S. Manchester, Conn.*	East, 6
Atwater, Harry Arthur	*ch e*	*Somerville*	*1 Avon St.*
Bacon, Charles Aaron	*me*	*Bedford*	Σ T A House
Bailey, Ernest Wing	*ce*	*Medford*	*7 Taylor St.*
Berthold, Oscar Hudson	*sc*	*Needham*	*69 Webster St.*
Bicknell, Harry Irving	*ee*	*Weymouth*	Paige, 9
Bogue, Robert Herman	*ch*	*Tufts College*	*29 Capen St.*
Bradford, Edith Harriet	*ab*	*Somerville*	*272 Summer St.*
Bragdon, Ralph Hasty	*ab*	*S. Boston*	*5 Pacific St.*
Brandt, Arthur Williams	*e*	*Ontario Centre, N. Y.*	East, 24
Brigham, Ferdinand	*ab*	*S. Framingham*	West, 4
Brooks, Marion Louise	*ab*	*W. Medford*	*47 Auburn St.*
Brown, Stanley Morton	*ce*	*Chelsea*	West, 14
Bruerton, Courtney	*ab*	*Malden*	*96 Cedar St.*
Bugbee, Edwin Percy	*ee*	*Methuen*	West, 30
Bugbee, Ralph Lawrence	*ee*	*Methuen*	West, 30
Butler, Benjamin Jarvis	*ee*	*Somerville*	*103 Bartlett St.*
Butterfield, Estella Elizabeth	*ab*	*Jacksonville, Vt.*	Metcalf, 11
Carter, Louis Hayward	*ch*	*E. Weymouth*	Δ T House
Collins, Elinor Osborne	*ab*	*Exeter, N. H.*	Metcalf, 3
Crawford, James Stevenson	*ee*	*N. Cambridge*	*20 Woodbridge St.*
Cummings, Leon Franklin	*ab*	*Dorchester*	West, 9
Davis, Albert William	*ch*	*S. Boston*	*146 L St.*
Day, Ruth Lewis	*ab*	*E. Boston*	*133 Princeton St.*
Doble, Frank Currier	*ee*	*Methuen*	Paige, 7
Entwistle, Dorothy Russell	*ab*	*Everett*	*55 Harvard St.*
Faelten, Willibald Carl	*ce*	*Roxbury*	Dean, 7
Fairbank, Parker Wheeler	*ee*	*Sudbury*	East, 25
Fisher, Austin Wellington	*ab*	*Fitchburg*	West, 23
Frost, Walter Sprague	*ch*	*Roxbury*	Dean, 10
Fuller, Lena Frances	*ab*	*Everett*	*63 Cottage St.*
Fuller, Philip Ely	*ce*	*Thorndike*	West, 32

Glasier, Arthur Franklyn	*ch*	*Roxbury*	*25 Bainbridge St.*
Hamill, George Keenan	*ch e*	*Stoneham*	*18 Park St.*
Harris, Nathan Conant	*ce*	*Auburn, Me.*	Δ Υ House
Herrick, Ralph Morris	*ee*	*Allston*	*7 Allston Hts.*
Hudson, Herbert Harold	*ee*	*Saugus*	Dean, 8
Jackman, Irving Wilson	*me*	*Cambridge*	*166 Chestnut St.*
Jones, William Moshier	*ce*	*Swampscott*	East, 19
Kean, Charles Douglas	*ab*	*Dorchester*	Paige, 4
Killion, William Vincent	*ce*	*Malden*	East, 24
Lamont, Richard Roy	*ab*	*W. Somerville*	*13 Conwell Ave.*
Lamprey, Pauline Adriana	*ab*	*Medford*	*11 Fulton St.*
Larrabee, Ernest Alonzo	*ee*	*Marlboro*	East, 29
Libby, John Edgar	*ab*	*Auburn, Me.*	Dean, 9
Lynch, John Francis	*ab*	*N. Cambridge*	*1 Cedar Sq.*
Mansfield, Lloyd Lewis	*me*	*Swampscott*	East, 34
Marble, Earl Robert	*ch e*	*Attleboro*	East, 19
Martins, Joseph da Silveira	*ce*	*Azores Islands*	West, 19
Maulsby, William Shipman	*ab*	*W. Somerville*	*80 Curtis St.*
McKenna, William Joseph	*ch*	*Winthrop*	West, 20
Medeiros, Roger Maria de Carvalho	*ee*	*Nordeste, St. Mickel's, Azores Islands*	West, 19
Merrill, Frank Wood	*ce*	*W. Somerville*	*90 Curtis St.*
Murray, Clifford Robert	*ce*	*Wethersfield, Conn.*	West, 31
Nason, Walton Hooker	*ce*	*N. Billerica*	Δ Υ House
Nickerson, Roy Gilchrist	*ch*	*Provincetown*	Ζ Ψ House
Page, Fred Odell	*ab*	*Plainfield, Vt.*	West, 8
Page, Roland Humphrey	*ce*	*Boston*	West, 29
Patten, Francis Howard	*ee*	*Marion*	Σ Τ Α House
Phalen, Harold Romaine	*me*	*Acton*	Σ Τ Α House
Phelps, Edward Parkhurst	*ce*	*Greenwood*	East, 22
Quennell, Alvin William	*ee*	*Roxbury*	West, 29
Savage, Percy Godfrey	*ch*	*Medford*	*15 Lapham St.*
Schwartz, Samuel	*ce*	*E. Billerica*	29 West St., W. Somerville
Sheehan, Thomas William	*ce*	*Malden*	*479 Pleasant St.*
Smith, Alfred Newell	*me*	*Dedham*	*1 Ashcroft St.*
Smith, Lilian Cora	*ab*	*Kensington, N. H.*	Metcalf, 12
Spear, Alice Josephine	*ab*	*Hyde Park*	Start, 3
Swenson, Ernest Siegfried	*sc*	*Medford*	*47 Newbern Ave.*
Talbot, Geoffrey Wanstall	*ee*	*Tufts College*	*11 Edison Ave.*
Vande Bogert, Edith Marguerite	*ab*	*Bearsville, N. Y.*	14 Winthrop St., Winchester
Weber, Harry Oscar	*ce*	*South Wales, N. Y.*	East, 29
West, John Albert	*ch e*	*Medford*	*8 Malvern Terrace*

White, Alfred Baylies	*sc*	*Taunton*	Z Ψ House
Woodbury, Edna Currier	*ab*	*Somerville*	*9 Howe St.*

Freshman Class

Adams, John Harold	*e*	*Passaic, N. J.*	East, 20
Anderson, Mildred Elvera	*ab*	*S. Manchester, Conn.*	Metcalf, 15
Atwater, Ralph Wight	*e*	*Somerville*	*1 Avon St.*
Belt, Ada Louise	*ab*	*W. Somerville*	*90 Bromfield Rd.*
Bennett, Edwin Saxton, Jr.	*sc*	*New Canaan, Conn.*	West, 26
Benson, Harry Oscar	*e*	*Everett*	*29 Oliver St.*
Berthold, Louise Anna	*ab*	*Saugus*	*392 Main St.*
Blanchard, Frank Nelson	*ab*	*W. Somerville*	*2 Curtis Ave.*
Boynton, William Henry	*mp*	*Groton*	East, 23
Bush, Vannevar	*e*	*Chelsea*	Dean, 10
Carlton, Lucy Barrett	*ab*	*Chelsea*	*75 Harvard St.*
Chapin, Octavia	*ab*	*Medford*	*102 Summer St.*
Charnock, Percy Clyde	*ce*	*Tufts College*	*50 Quincy St.*
Colby, Marion Adeline	*ab*	*Hillsboro, N. H.*	Metcalf, 13
Colman, Roger Ammiel	*e*	*Somerville*	*151 Central St.*
Coombs, Harry	*ce*	*Tufts College*	East, 25
Costanza, George	*ab*	*Boston*	*309 North St.*
Davey, Katherine Teresa	*ab*	*Lawrence*	*152 Oak St.*
Davis, Beatrice Labaree	*ab*	*Webster*	Metcalf, 3
Dean, Leland Edgar	*ce*	*Cambridge*	*8 Rockingham St.*
Dearborn, Fred Earle	*e*	*Canterbury, N.H.*	24 William St., W. Somerville
Dennett, George Franklin	*e*	*Cambridge*	*18 Springfield St.*
Dickinson, Roy Willis	*ab*	*Wiscasset, Me.*	Paige, 13
Dillingham, Paul	*sc*	*Bridgeport, Conn.*	West, 26
Dodd, Mary Helen	*ab*	*Lexington*	*14 Sherman St.*
Ellms, Carlton Warren	*e*	*S. Sudbury*	East, 33
Etheridge, Harold Lowell	*ee*	*Somerville*	Z Ψ House
Faden, James Leatherbee	*e*	*Waltham*	*18 Pleasant St.*
Fairbanks, Frank Bates	*ab-e*	*Passaic, N. J.*	East, 20
Fallis, Ethel Hazel	*sc*	*W. Somerville*	*43 Hall Ave.*
Feeley, Edward Murray	*sc*	*Brookline*	East, 17
Ferraz, Raul de Oliveira	*e*	*Sao Paulo, Brazil, S. A.*	90 Curtis St.
Field, Abby Rugg	*ab*	*Providence, R. I.*	Metcalf, 7
Field, Herbert Vaughan	*ch*	*W. Somerville*	*21 Milton St.*
Fisher, George	*e*	*Boston*	*50 Salem St.*
Flint, Fred Warren	*e*	*W. Somerville*	*22 Dover St.*
Foster, Frank Irving	*e*	*Melrose*	*223 W. Emerson St.*
Foster, Marion Fenwick	*ab*	*W. Somerville*	*11 Whitfield Rd.*

Freeman, Harris Howard	*e*	*Somerville*	*24 Bonner Ave.*
Gale, Louis Bernard	*e*	*Marblehead*	East, 16
Gallupe, Harold Quimby	*ch*	*Everett*	*175 Hancock St.*
Gillespie, Norman Wilkinson	*ab*	*Dorchester*	*683 Columbia Rd.*
Goff, Herbert Bancroft	*e*	*Attleboro*	East, 28
Golden, Annie	*sc*	*Somerville*	*9 Crown St.*
Goldman, Abraham Hyman	*e*	*Boston*	*29 Lowell St.*
Goodwin, Joseph Michael	*e*	*Stoneham*	*35 Pleasant St.*
Gott, Charles	*ab*	*Arlington*	*41 Medford St.*
Gould, Charles Thomas	*e*	*Cambridge*	*35 Tufts St.*
Graham, Arthur Francis, Jr.	*e*	*Dorchester*	*12 Thane St.*
Gray, Inez Marion	*ab*	*Portsmouth, N. H.*	Metcalf, 5
Green, Marion Adelaide	*ab*	*Everett*	*35 Dean St.*
Green, Thomas Henry	*e*	*Winthrop*	East, 31
Greenberg, Rose	*ab*	*W. Somerville*	*18 Rogers Ave.*
Greenough, Maurice Brown	*ce*	*Groveland*	East, 6
Gurvin, John Edward	*e*	*Somerville*	*6 Wilson Ave.*
Hall, Ernest Gerarde	*e*	*Somerville*	*239 Highland Ave.*
Harrington, Rufus Frost	*ch*	*Medford*	*21 College Ave.*
Harris, Gilbert Munday	*e*	*Newton*	*201 Newtonville Ave.*
Hartshorn, Carl Larrabee	*e*	*W. Somerville*	*59 Irving St.*
Harvey, Will Calvin	*ab-bd*	*Newfane, Vt.*	Paige, 27
Hazeltine, Burt Alden	*e*	*W. Somerville*	*20 Day St.*
Henderson, William Davis	*e*	*Tompkinsville, N. Y.*	East, 14
Henry, David Edward	*ee*	*Dorchester*	East, 26
Higgins, Reuben, Jr.	*e*	*S. Portland, Me.*	West, 31
Hogan, Francis Cleveland Kenneth	*e*	*W. Somerville*	*53 Bromfield Rd.*
Hooper, Allen Gunnison	*ab-e*	*Tufts College*	*124 Professors Row*
Hughes, John Parnell	*ab*	*Winthrop*	East, 31
Hulen, Bertram Dyer	*ab*	*Cliftondale*	Dean, 3
Hunnewell, William	*e*	*Somerville*	*23 Milton St.*
Huntington, Paul Osborne	*e*	*Ayer*	
Hussey, Philip Ellison	*e*	*Mattapan*	East, 21
Isola, Vico Cacciatori	*mp*	*Waban*	West, 25
Jackson, Helen Camille	*ab*	*Medford*	*86 Otis St.*
Johnson, Philip Woodbury	*e*	*Methuen*	West, 15
Jones, Walter Leverett	*e*	*Somerville*	*8 Pleasant Ave.*
Kattelle, Laurence Watson	*ch e*	*W. Newton*	West, 15
Keegen, John Louis	*ab*	*Brookline*	East, 32
Kendall, Harrison Shattuck	*e*	*Waverley*	*146 Mill St.*
Kewer, Leo Thomas	*ch*	*Waverley*	*16 Hawthorne St.*
Lawlor, James Joseph	*ce*	*Chelsea*	*108 Auburn St.*
Lloyd, George Adolph	*e*	*Somerville*	*68 Albion St.*

Longley, Pearle Emogene	*ab*	*Winchester*	*77 Walnut St.*
Lord, Kenneth Prince	*e*	*Rockland, Me.*	Paige, 2
Lovejoy, Esther Lizzie	*ab*	*W. Somerville*	*62 Rogers Ave.*
Lovering, Stanley Hutchinson	*e*	*W. Medford*	*42 Harvard Ave.*
Lovett, Israel Herrick	*e*	*Omaha, Neb.*	13 Lincoln St., Somerville
Lowe, Robert Manning	*ab*	*Rockport*	23 Ware St., W. Somerville
Mackin, Clarence Harvey	*ab*	*Manchester*	West, 14
MacKillop, Daniel Alexander	*ee*	*Grand River Falls, N. S.*	21 W. Dedham St., Boston
Manning, Bessie	*ab*	*Hillstown, Ct.*	Metcalf, 6
Mansfield, Robert Chapman	*e*	*Swampscott*	East, 34
Marden, Leslie Ona	*e*	*W. Somerville*	*20 Powder House Ter.*
Martin, Abner Waldo	*me*	*Salem*	West, 1
Martin, Helen Julia	*ab*	*Plainfield, Vt.*	Metcalf, 2
McAuliffe, John Augustin	*e*	*Dorchester*	*71 Thitford Ave.*
McCarthy, Joseph Augustine	*ab*	*N. Andover*	*231 Cleveland St.*
McCollom, Welby Henry	*e*	*Roslindale*	*40 Symmes St.*
Monge, L. Ernesto	*e*	*Quito, Ecuador*	245 W. Newton St., Boston
Mountfort, Sumner Leighton	*e*	*Portland, Me.*	West, 23
Moyer, Ruth	*ab*	*Hartford, Conn.*	Metcalf, 2
Nolan, Conrad	*e*	*Jacksonville, Fla.*	120 Curtis St.
O'Donnell, Roger Joseph	*e*	*S. Boston*	*145 L St.*
Owler, Isabella Gertrude	*ab*	*Somerville*	*30 Browning Road*
Parker, Levi Wright	*e*	*Somerville*	*45 Dartmouth St.*
Pecker, Albert David	*e*	*Marblehead*	*Tedesco St.*
Penniman, Ruth Evelyn	*ab*	*Peabody*	Start, 4
Phelps, Harry Louis	*e*	*Marlboro*	East, 33
Phillips, Etta Marion	*ab*	*Lowell*	Start, 4
Phillips, Wendell Codding	*e*	*Dedham*	Dean, 11
Porter, Leslie Ross	*ce*	*Peabody*	Dean, 7
Prentiss, John Herbert	*e*	*Belmont*	*206 Prospect St.*
Proctor, Percy Maynard	*sc*	*N. Cambridge*	*138 Elm St.*
Raymond, George Stanley	*me*	*N. Cambridge*	*51 Upland Road*
Rindge, Wellington	*ch*	*Cambridge*	*62 Upland Rd.*
Risegari, George	*e*	*Somerville*	*28 Claremon St.*
Ritchie, Effie May	*ab*	*W. Somerville*	*293 Summer St.*
Roberts, Raymond Moulton	*ee*	*Melrose Hlds.*	*124 Franklin St.*
Robnett, Edwin Howard	*ee*	*Tyler, Texas*	Dean, 11
Rorty, James Hancock	*ab*	*Middletown, N. Y.*	East, 30

Russell, Cyrus Johns	*e*	*W. Somerville*	*1097 Broadway*
Sanborn, Edith May	*ab*	*Amesbury*	Start, 7
Sargent, Ralph Edward	*e*	*Annisquam*	East, 16
Scammon, Helen Rachel	*ab*	*Stratham, N. H.*	Metcalf, 12
Schreiber, Herman Louis	*ce*	*Jamaica Plain*	*13 Bishop St.*
Searle, Dana Aubrey	*e*	*Franklin*	West, 27
Secoy, Edgar David	*sc*	*Johnstown, N. Y.*	Paige, 14
Shaw, Irving Roland	*ch*	*Palmer*	Z Ψ House
Shepard, Ruth	*ab*	*Wakefield*	Metcalf, 14
Smith, William Paine	*ab*	*Beverly*	West, 16
Sokolovsky, Jacob Max	*e*	*Boston*	*83 Poplar St.*
Steinberg, Antonia Adeline	*ab*	*Webster*	Metcalf, B
Sterling, Lewis Edwin	*ee*	*Everett*	*66 Lexington St.*
Strecker, Harry Louis	*e*	*Boston*	*41 E. Concord St.*
Strong, William Millgrove	*ch*	*Everett*	*19 Waverley St.*
Stryker, Henry Bernard	*e*	*Cambridge*	*28 Tremont St.*
Taylor, Prentiss Willard	*e*	*Hinsdale, N. H.*	West, 24
Thacher, Lester Enoch	*mp*	*Dorchester*	Dean, 14
Tosi, Joseph Andrew	*e*	*Revere*	East, 26
Tower, Carl William	*e*	*Everett*	*233 Belmont St.*
Tower, Henry Edward	*e*	*Hudson*	East, 9
Truesdale, Herbert Lawrence	*e*	*Somerville*	*174 Albion St.*
Waterman, Charlotte Jane	*ab*	*Tufts College*	Metcalf, C
Wellman, George Ralph	*e*	*Westminster West, Vt.*	East, 30
Whippen, Leonard Swan	*e*	*Kingston, N. H.*	East, 15
White, Hazel	*ab*	*Somerville*	*30 Richdale Ave.*
Whiting, Lewis Morton	*ee*	*Accord*	West, 1
Wilde, Zilpah	*ab*	*W. Somerville*	*12 Raymond Ave.*
Wiley, Alma Gertrude	*ab*	*Somerville*	*446 Broadway*
Williams, Harold Jenkin	*ch*	*Quincy*	*74 Common St.*
Wolcott, John Gilmore	*sc*	*Cambridge*	*11 Trowbridge St.*
Woode, Alva Vivian	*ab*	*Kingston, Jamaica*	23 Cross St., Charlestown

Special Students

Allen, Herbert Joseph I. *Chemistry*	*Ayer*	Curtis, 1
Baker, Harold Nicholas I. *Medical Preparatory*	*N. Attleboro*	90 Curtis St.
Bradbury, Alma Gray III. *Language*	*Boston*	Metcalf, 6
Butler, Helen Louise III. *Language*	*W. Medford*	*17 Irving St.*

Carter, Herbert Melville I. *Medical Preparatory*	*Norwood*	East, 14
Donovan, Juliana Cecilia IV. *Economics*	*W. Somerville*	*126 College Ave.*
Gale, Marion Emeline I. *English*	*Webster*	Start, 3
Graham, Emily Cox I. *Language*	*Yarmouth, Me.* 1 Evergreen Ave., Somerville	
Harmon, Helen Althea II. *Science and Language*	*Tufts College*	*114 Curtis St.*
Hight, William Webster II. *Science and Langurge*	*Portland, Me.*	West, 5
Honeij, James Albert, M.D., '08 II. *Biology*	*Cambridge*	*2 Arlington St.*
Shortell, Joseph Henry I. *Medical Preparatory*	*Salem*	*9 Laurel St.*
Weiner, Charles K. I. *Medical Preparatory*	*Somerville*	*467 Columbia St.*

Supplementary List

[Students present during 1908-09, but not appearing in the catalogue]

Charnock, Percy Clyde	*ce*	*Tufts College*	*50 Quincy St.*
Dean, Leland Edgar	*e*	*Cambridge*	*8 Rockingham St.*
Porter, John Edwards	*sp*	*Somerville*	*194 Central St.*
Shinn, Philip Allen	*ee*	*Tufts College*	
Winchester, John Jacob	*me*	*Woburn*	*22 Plympton St.*

Theological School

THREE-YEAR COURSE

Second Year

Morton, George Fisher, B.S., '99; M.S., '00	*W. Somerville*	Paige, 2

First Year

Robinson, Elmo Arnold, B.S. (M. I. T.) '09	*Canandaigua, N. Y.*	Paige, 26
Wilmot, Frederick Algernon, A.B. (Harv.) '09	*Boston*	Paige, 16

FOUR-YEAR COURSE

Fourth Year

Boorn, George Clyde	*Adams*	Paige, 36

First Year

Robertson, Forbes William	*Arlington*	Paige, 28
Scott, Clinton Lee	*Newport, Vt.*	Paige, 21

SIX-YEAR COURSE

Sixth Year

Vogt, Dayton George, A.B., '08	*Buffalo, N. Y.*	Paige, 22

Fifth Year

Etz, Roger Frederick, A.B., '09	*Cleveland, O.*	Paige, 19

Third Year

Blagbrough, Vernon Edmund	*Orange*	Paige, 18
Carritt, Ernest Henry	*Tufts College*	Paige, 31

First Year

Gaskin, William	*Dixfield, Me.*	Paige, 25
Harvey, Will Calvin	*Newfane, Vt.*	Paige, 27

Special Students

Hale, Arthur Thomas	*Lawrence*	Paige, 1
Mann, Horatio Gardner	*Rockland*	Paige, 35
Moon, Thomas Elmer	*Philadelphia, Pa.*	Paige, 14
Porter, John Edwards	*Tufts College*	Paige, 30
Rose, William Wallace	*Philadelphia, Pa.*	Paige, 29

Bromfield-Pearson School

Azevedo, Renato de Almeida	*Sao Paulo, Brazil*	90 Curtis St.
Heine, Richard Lindsay	*Medford*	*49 Summer St.*
Hussey, William Horner	*Danvers*	East, 1
MacKenzie, Clifford Royal	*Boston*	West, 32
Tattan, John David	*Somerville*	*458 Somerville Ave.*
Weaver, Frederic Nixon	*Dorchester*	*65 Edson St.*
Whippen, Joseph Gordon	*E. Lynn*	East, 15
White, Merritt Oberlin	*Clintonville, Ohio*	East, 13

Medical School

[P. O. Address, 416 Huntington Ave., Boston, Mass.]

Fourth Year

Abbott, Samuel Edson . . . . . *Auburn, N. Y.*
Bigelow, James Bernard . . . . . *Holyoke*
Bliss, Raymond Whitcomb . . . . . *Belmont*
Bolduc, Alfred George . . . . . *Fall River*
Burnett, Louis Raymond . . . . . *E. Milton*
Byrne, Claudius James . . . . . *Concord, N. H.*
Cameron, Edward Spence . . . . . *Pawtucket, R. I.*
Campbell, Fred Glover . . . . . *Rockland, Me.*
Cassels, Louis Raymond . . . . . *Attleboro Falls*
Chandler, Charles Henderson . . . . . *Boston*
Clark, Harry Ainsworth . . . . . *Dorchester*
Cook, James Henry . . . . . *Brookline*
Cook, William Wilder . . . . . *Brookline*
Crandall, Walter Midkiff . . . . . *Lynn*
Cummings, Dana Frank . . . . . *Natick*
Davidson, Alfred, PHARM. D. (Mass. Coll. Ph.) *E. Boston*
Dixon, Arthur . . . . . *Worcester*
Dodd, John Edward . . . . . *Holliston*
Donovan, Walter James . . . . . *Providence, R. I.*
Dow, Frank Edward . . . . . *Roxbury*
Drummey, Joseph Leonard . . . . . *Waltham*
Ducharme, Alphonse Napoleon, B.L. (Laval) . . *Worcester*
Dunham, Harry Bartlett . . . . . *Brockton*
Dunn, James Ringer . . . . . *Winthrop*
Earle, George William . . . . . *Boston*
Fishman, Maurice . . . . . *Lawrence*
Folger, George Arthur . . . . . *Melrose*
Funnell, Wilfred Goldwin . . . . . *New York, N. Y.*
Gerber, Wilhelmina Georgina Marie von . . *Weston*
A.B. (Bryn Mawr)
Granstein, Charles Israel . . . . . *Chicopee*
Hagerty, Harry John . . . . . *Arch Spring, Pa.*
Harnett, Edward Henry Lewis . . . . . *Dorchester*
Harrington, Daniel James Leo . . . . . *Dorchester*
Hassett, Leonard Watson . . . . . *Lynn*
Heffernan, Dennis William . . . . . *Holliston*

Hennessey, Thomas Francis . . . . . *Weymouth*
Herrin, Herbert Eliot . . . . . *Boston*
Hughes, Frank . . . . . *Everett*
Jamieson, Earl Frederick . . . . . *Boston*
Kagan, Samuel Henry . . . . . *Roxbury*
Kelleher, James Patrick . . . . . *Brockton*
Kenney, Clarence Bronson . . . . . *Sharon, Vt.*
Kerr, Robert Brown . . . . . *Roxbury*
Lamoureux, Stanislas Albert . . . . . *New Bedford*
Lawley, Brace Irving . . . . . *Skowhegan, Me.*
Leonard, Christina Margaret . . . . . *Lewiston, Me.*
Loredo, Serafin . . . . . *Havana, Cuba*
Macaulay, Joseph Arthur . . . . . *Boston*
Marston, Warren Winfield . . . . . *Cochituate*
Martin, Oscar . . . . . *Tufts College*
McCarthy, Eugene Francis . . . . . *Cambridge*
McMahon, Francis Joseph . . . . . *Brookline*
Messier, Adlor Eugene . . . . . *Worcester*
Moriarty, John Joseph . . . . . *Danvers*
Morse, Alfred Irving . . . . . *Cliftondale*
Morse, Karl Goff . . . . . *Waterville, Me.*
Muir, Robert Joseph . . . . . *Dorchester*
Murphy, Dennis John . . . . . *Worcester*
Murphy, John Patrick Henry . . . . . *Cambridge*
Myers, Edward Louis . . . . . *Woonsocket, R. I.*
Olin, Harry . . . . . *Somerville*
O'Sullivan, Anna . . . . . *Boston*
Owen, Albert Simpson . . . . . *South Framingham*
Penny, Mary McDermott . . . . . *Cliftondale*
Perkins, Hamilton Chesley . . . . . *Madbury, N. H.*
Pobirs, Louis Jacob . . . . . *Providence, R. I.*
Poirier, George Henri . . . . . *Salem*
Reynolds, Frank Leo Sinclair . . . . . *Worcester*
Richards, Cyril Godfrey . . . . . *Boston*
Rosen, David William . . . . . *Boston*
Slater, Eleanor Mary . . . . . *Boston*
Smith, Earl Moulton . . . . . *Boston*
Sprague, Russell Bradford . . . . . *Providence, R. I.*
Stearns, Albert Warren . . . . . *Boston*
Thomas, Elmer Ellsworth . . . . . *Milford*
Toomey, Joseph Humphrey . . . . . *S. Boston*
Tripp, Edwin Prescott . . . . . *Beverly*
Tynan, Joseph Patrick . . . . . *Boston*

Webb, Albert Edward . . . . . *Salem*
Welch, Daniel Edward . . . . . *Salem*
White, Robert Marshall . . . . . *Cambridge*

Third Year

Ahlstrom, Hjalmar . . . . . *Boston*
Barone, Joseph . . . . . *Boston*
Behrman, Roland Augustus . . . . . *Waltham*
Belin, Harry . . . . . *Boston*
Bicknell, Ralph William . . . . . *Canton, Me.*
Blount, Samuel Gilbert . . . . . *Providence, R. I.*
Boyd, Francis Peter . . . . . *Brockton*
Boyd, James Francis . . . . . *Brockton*
Buck, Clifton Leon . . . . . *Wilton, Me.*
Cantarow, Daniel, PH.G. (Russia Coll. Ph.) . *Hartford, Conn.*
Caswell, Walter Wells . . . . . *Boston*
Church, Claude Henry . . . . . *Cambridge*
Clarke, Thomas Greene . . . . . *Fall River*
Coates, Edward Augustus, Jr. . . . . *Winthrop*
Cohen, Nathaniel Maurice . . . . . *Roxbury*
Comerford, Ethel Frances . . . . . *Athol*
Cooney, Margaret Blanche . . . . . *West Newbury*
Coppinger, Sarah Elisabeth . . . . . *Needham Heights*
Cosgrove, Joseph Justin . . . . . *Hopkinton*
Croke, Louis Ward . . . . . *Dorchester*
Cummings, Frank Anthony . . . . . *Providence, R. I.*
Currier, Cyrus Richardson . . . . . *Dorchester*
Dwyer, John Edward, Jr. . . . . *Cambridge*
Edelstein, Samuel . . . . . *Roxbury*
Fennelly, Daniel John . . . . . *Fall River*
Forhan, Neil Kittredge . . . . . *Canton, Me.*
Garipay, Ellsworth Peter . . . . . *Holyoke*
Golden, Joseph Francis . . . . . *Roxbury*
Gwinnell, Alfred Weston . . . . . *Boston*
Hagopian, Levon George . . . . . *Boston*
Henderson, Frank Francis . . . . . *Roxbury*
Ireson, Franklin Reynolds . . . . . *Marblehead*
Johnson, Alfred Emile, Jr. . . . . *Dedham*
Kaplovitch, Henry . . . . . *Lawrence*
Kelley, Edward Joseph . . . . . *Brookville*
Kindregan, Thomas Henry . . . . . *Brockton*
Lussier, Waldo James . . . . . *Woonsocket, R. I.*
Lynch, Henry Edmund . . . . . *Holyoke*
Mackenzie, Roland Chester . . . . . *Waltham*

Marr, Edward Loring . . . . . *Malden*
Martin, Edward . . . . . *Boston*
Miller, William Henry, A.B. (Lincoln) . . . . *Charleston, S. C.*
Oulton, Lamert, PHARM.D. (Mass. Coll. Phar.) *Port Elgin, N. B.*
Pearl, Samuel Maurice . . . . . *Boston*
Perkins, Franklin Aborn . . . . . *Madbury, N. H.*
Peter, Alphonse Joseph . . . . . *Salem*
Power, James Edward, D.M.D. (Harvard) . . *Providence, R. I.*
Preble, Grace Olive . . . . . *E. Boston*
Quennell, Willard Leslie . . . . . *Boston*
Quinby, Robert Stanley . . . . . *N. Sandwich, N. H.*
Remick, Sumner Haven . . . . . *Reading*
Robertson, Wilhelmine . . . . . *Arlington*
Scott, Norman McLean . . . . . *Melrose Highlands*
Seavey, Hollis Lester . . . . . *Cambridge*
Shaw, Celeste Beatrice . . . . . *Newport, N. S.*
Steward, Carleton White, A.B. (Colby) . . . *Rockport, Me.*
Stone, Jane Gray . . . . . *Roxbury*
Strom, Marie Charlotte . . . . . *Cumberland, Me.*
Sullivan, Charles Joseph . . . . . *Randolph*
Tibbetts, Guy Daniel . . . . . *Gloucester*
Wagner, Joseph Aloywious . . . . . *Providence, R. I.*
Waldie, George McLeod . . . . . *Dorchester*
Waterhouse, Roscoe Morgan . . . . . *Somerville*
White, Henry Alverado . . . . . *Taunton*
Willoughby, Earl Carlisle . . . . . *N. Haverhill, N. H.*
Wilson, John Thomas . . . . . *Salem*
Wyman, Edwin Theodore . . . . . *Sebec, Me.*
Young, Annie Roberts . . . . . *S. Berwick, Me.*

Second Year

Adamian, Mariam Garoudj . . . . . *Boston*
Ahern, John Francis . . . . . *Dorchester*
Albert, Lionel Louis . . . . . *Malden*
Allard, Carlton Eugene . . . . . *Allerton, Iowa*
Allison, Carl Edwin . . . . . *Wakefield*
Ayers, Charles Elton . . . . . *Taunton*
Barney, Willis Oliver . . . . . *Malden*
Barrow, Allen Rogers . . . . . *Milford*
Benway, Charles Alfred . . . . . *Somerville*
Blanchard, Paul Drake . . . . . *Oldtown, Me.*
Brown, Chester Perkins . . . . . *Cambridge*
Brown, Ralph Neally . . . . . *Meredith, N. H.*

Brown, Roy Farrington . . . . . *Provincetown*
Brunelle, Arthur Lord . . . . . *New Bedford*
Brunick, Patrick Vincent . . . . . *S. Boston*
Burack, Abraham . . . . . *Roxbury*
Burrell, Harry Cutter . . . . . *Medford*
Church, Belle Seddon . . . . . *Cambridge*
Clarke, Willis Earl . . . . . *Portland, Me.*
Cleary, Robert Emmett . . . . . *Holyoke*
Colwill, Albert William . . . . . *Magnolia*
PHARM.D. (Mass. Coll. Ph.)
Conley, Brainard Francis . . . . . *Ipswich*
Corvese, Anthony, PH.G. (R. I. Coll. Ph.) . . *Providence, R. I.*
Couch, Mary Catherine . . . . . *Somerville*
Coursey, Frank Rudolph . . . . . *Boston*
Courtney, Thomas Joseph . . . . . *Worcester*
Curran, John Francis . . . . . *Wheelwright*
Cutler, Myron Fred . . . . . *W. Somerville*
Cutler, Raymond William . . . . . *Worcester*
Davis, Charles Frank, Jr. . . . . *Littleton, N. H.*
DeWolf, Charles Wentworth . . . . . *Somerville*
Downie, Charlie DeVaudry . . . . . *W. Somerville*
Drury, John Aloysius . . . . . *N. Attleboro*
Duncan, Stanley Forbes . . . . . *Quincy*
Eager, Harold Williams . . . . . *Manchester, N. H.*
Edwards, Bessie Lee . . . . . *Lynn*
Espejo, Gonzalo . . . . . *Merida, Yucatan, Mexico*
Finkel, Samuel Paul . . . . . *Boston*
Finkelstein, Nathan . . . . . *Boston*
Fitzpatrick, George Edward . . . . . *N. Bellingham*
Foley, Pauline Muriel . . . . . *Brighton*
Forrest, Erle D. . . . . *Boston*
Fountaine, Ernest Hanson, D.M.D. (1908) . . *Haverhill*
Gale, Eugene Manson . . . . . *Amesbury*
Garry, John Joseph . . . . . *Methuen*
Gechgass, Gershon . . . . . *Chelsea*
Gervais, Harriet Marion . . . . . *Westboro*
Giles, William Benard . . . . . *W. Somerville*
Gilman, Samuel Thomas . . . . . *Peabody*
Godvin, Bernard Aloysius . . . . . *Jamaica Plain*
Greenblatt, Hattie . . . . . *Providence, R. I.*
Gwynne, Samuel Carlton . . . . . *Melrose Highlands*
Healey, Bernard Charles . . . . . *Boston*
Howard, Irma Ruth . . . . . *Boston*
Jakmauh, Paul John . . . . . *S. Boston*

Johnson, Gertrude Christine . . . . . *S. Manchester, Conn.*
Jones, Guy Walter Stanley . . . . . *Waltham*
Jordan, Harmon Paul Buffum . . . . . *Holliston*
Judd, Ernest Hart . . . . . *W. Hartford, Conn.*
Keely, Mary Agnes . . . . . *Nashua, N. H.*
Kelley, Lawrence Kendall . . . . . *Haverhill*
Kennington, Henry Carter . . . . . *Boston*
Kiley, Daniel Joseph, Jr. . . . . *Everett*
King, Drue . . . . . *Boston*
Kinsella, Michael Allen . . . . . *Auburn, N. Y.*
Largay, Arthur Owen . . . . . *Bangor, Me.*
Lennon, John Marcus H. . . . . *Jamaica Plain*
Locke, Harry Leslie Franklin . . . . . *Hudson*
MacNaughton, Cordelia Isabella . . . . . *Boston*
MacQueen, James Allen . . . . . *Boston*
Madden, John Joseph, Jr. . . . . *Waltham*
Marcus, Jacob . . . . . *Boston*
McGann, Pierce Powers . . . . . *Somerville*
McWeeny, Bernadette Marie . . . . . *Arlington*
Middleton, Willis Pearl . . . . . *Quincy*
Monaghan, Mary Frances . . . . . *Waltham*
Murphy, Daniel Francis . . . . . *Waltham*
Mysel, Philip . . . . . *Roxbury*
O'Brien, Edward Joseph, Jr. . . . . *E. Boston*
O'Brien, Frederick William . . . . . *Roxbury*
O'Malley, Charles Francis . . . . . *Clinton*
Powers, James Joseph . . . . . *Manchester, N. H.*
Sacowitz, Henry Edward . . . . . *S. Boston*
Schön, Edward . . . . . *Roxbury*
Shapleigh, Harry Lee . . . . . *Somerville*
Sheridan, Philip Edward Anthony, A.B., 1908 . *S. Boston*
Simonds, Frederick Artemas . . . . . *Wakefield*
Spinney, Frederic Ira . . . . . *Boston*
Sproat, William Delano . . . . . *Boston*
Stamp, Floyd R. . . . . *Alliance, Ohio*
Sweet, John Henry Throop, Jr. . . . . *Hartford, Conn.*
Tobey, Henry Pratt . . . . . *Great Barrington*
Trachtenberg, Julius Caesar . . . . . *Boston*
Tully, George William . . . . . *Southbridge*
Turetzky, William Leo . . . . . *Dorchester*
Weatherbee, George Bradford . . . . . *Lee, Me.*
Wellington, Anna Colburn . . . . . *Boston*
Woodside, John Nelson . . . . . *Cambridge*

First Year

Allen, Arnold Noble . . . . . *Roslindale*
Allen, Harold Musgrave . . . . . *Boston*
Armitage, Henry George . . . . . *Haverhill*
Bagnall, Elmer Stanley . . . . . *Roslindale*
Balcom, Paul Parker . . . . . *Aylesford, N. S.*
Barron, Maurice Edward . . . . . *Cambridge*
Basch, William Eustis Russell . . . . . *Boston*
Bass, Harris . . . . . *Plymouth*
Baxter, Clarence Pennell . . . . . *Boston*
Bishop, William Atkins . . . . . *Somerville*
Blaisdell, Christopher Carroll . . . . . *E. Franklin, Me.*
Boylan, Francis Joseph . . . . . *Boston*
Boynton, Harry Deering . . . . . *Cornish, Me.*
Brady, Cecil Norbert . . . . . *Boston*
Bresnihan, Frank Nesdel . . . . . *Cambridge*
Brosius, Otto Tiemann . . . . . *Belleville, Ill.*
Brown, Alfred Whittemore . . . . . *Quincy*
Browne, William Edward . . . . . *Brockton*
Bucklee, Wesley Havey . . . . . *Hartford, Conn.*
Burke, John Henry . . . . . *Rockland*
Cabeceiras, Henry Joseph . . . . . *Somerville*
Caldicott, Francis Stephen . . . . . *Milford*
Chamberlin, Harold Augustus . . . . . *N. Abington*
Chase, James Milton . . . . . *Hyde Park*
Chronquest, Alfred Peter . . . . . *Boston*
Clark, William Francis . . . . . *Peabody*
Clarke, Mary Ella . . . . . *Ward Hill*
Commins, Edward Francis . . . . . *Somerville*
Comstock, Fred Walter . . . . . *New Haven, Conn.*
Connor, Harold James . . . . . *Pawtucket, R. I.*
Costello, James Francis . . . . . *Wollaston*
Couillard, Charles Anthony . . . . . *Manchaug*
Cowles, Dwight . . . . . *Beverly*
Cox, Oscar Francis, Jr. . . . . *Dorchester*
Crowley, Jeremiah Joseph . . . . . *N. Abington*
Cullen, Charles Andrew . . . . . *Hyde Park*
Currin, Francis Walter . . . . . *Peabody*
Curry, William Joseph . . . . . *Charlestown*
Daly, John . . . . . *Lowell*
Deacy, John Joseph . . . . . *Lawrence*
Devaney, Luke Terrence . . . . . *Reading*
Devlin, John Augustine, Jr. . . . . *Brighton*

Dickens, Willard Lee . . . . . *Camden, Me.*
Dickson, Ellsworth Joseph Murray . . . . . *W. Somerville*
Dolahar, John Edward . . . . . *Boston*
Driscoll, Robert Ellsworth . . . . . *Cambridge*
Drummond, Oliver Murray . . . . . *Providence, R. I.*
DuVally, James Francis . . . . . *Boston*
Eames, Helen Tibbetts, A.B. (Mt. Holyoke) . *S. Framingham*
Earl, Theodore Alexander . . . . . *Boston*
Elkin, Samuel Nathaniel . . . . . *Boston*
Felch, George Alfred . . . . . *Ayer*
Flynn, John Henry . . . . . *Salem*
Flynn, Joseph Francis Xavier . . . . . *Lowell*
Flynn, Thomas Stephen . . . . . *Woonsocket, R. I.*
Friedman, Benjamin . . . . . *Boston*
Friedman, Eli . . . . . *Boston*
Gallant, Alfred Edward, A.B. (St. Ann's) . . *Waltham*
Garrett, William Leo, PH.C. (R. I. Coll. Ph.) . *Providence, R. I.*
Gerety, George Joseph . . . . . *Plymouth*
Gilmore, Louis Daniel . . . . . *Exeter, N. H.*
Ginn, James Richard . . . . . *W. Somerville*
Goding, Arthur Nathaniel . . . . . *E. Boston*
Goetschius, Percy Berry . . . . . *New York, N. Y.*
Goldberg, Harry Joseph . . . . . *Boston*
Goldman, Max . . . . . *Boston*
Gooding, John Harold . . . . . *Boston*
Grogan, Margaret Victorine . . . . . *W. Swanzey, N. H.*
Gunter, Fred Clarke . . . . . *Somerville*
Guthrie, Andrew Doherty . . . . . *Roxbury*
Haley, William Thomas . . . . . *Marblehead*
Hall, Reuben Stanford . . . . . *Jamaica, B. W. I.*
Harding, Dana Edward . . . . . *Somerville*
Hartnett, John Henry . . . . . *Worcester*
Hassman, David Morris . . . . . *Reading, Penn.*

PHARM.D. (Phila. Coll. Ph.)

Heap, Richard Dunham . . . . . *Fall River*
Howland, George William . . . . . *Roslindale*
Hynes, Fred Henry . . . . . *New Haven, Conn.*
Jennings, John Greenwood . . . . . *Jewett City, Conn.*
Jensen, William Christian . . . . . *Worcester*
Johnson, Cecil Haven . . . . . *Winthrop*
Johnson, Guy Lloyd . . . . . *Littleton, N. H.*
Jones, Fred Durgin . . . . . *Fall River*
Kaplan, Morris . . . . . *Boston*
Keating, William Bernard . . . . . *Natick*

Kelleher, Simon Bartholomew . . . . . *Cambridge*
Kemp, Lysander Schaffer . . . . . *N. Cambridge*
Kenney, John Francis . . . . . *New Bedford*
Kenworthy, Marion Edwena . . . . . *Middletown, Conn.*
Kewer, Leo Thomas . . . . . *Waverley*
Knowlton, George Harry . . . . . *Manchester, N. H.*
PH.G. (Phila. Coll. Ph.)
Knowlton, John Cleaves, ... *Chelsea*
Kubovec, Anna Frances . . . . . *Turners Falls*
Lane, John Andrew . . . . . *Cambridge*
Leary, Alfred James . . . . . *Gilbertville*
Ledoux, Arthur Joseph . . . . . *Fall River*
Lemay, Alfred Mederic . . . . . *Marlboro*
Levek, Joseph . . . . . *Lawrence*
Levy, Benjamin George . . . . . *Medway*
Levy, Maurice Marshall . . . . . *Somerville*
Logiodice, Leonard Francis . . . . . *Tyler City, Conn.*
Lyle, Eveline Burton, A.B. (Mt. Holyoke) . . *Gloucester*
MacKenzie, James Alexander . . . . . *Louisville, N. S.*
MacLeod, Emily Clark . . . . . *S. Boston*
Macomber, Clarence Alden . . . . . *Pittsfield, Me.*
Madden, John James . . . . . *Charlestown*
Margolis, Barney Joseph . . . . . *New Bedford*
Marr, David Finlay . . . . . *Westerly, R. I.*
Marr, Robert McClellan . . . . . *Westerly, R. I.*
Marsh, Harold Edward . . . . . *Quincy*
Martin, Harold Winthrop . . . . . *Roxbury*
Martin, William Richard . . . . . *Spencer*
McCoart, Richard Felix, Jr. . . . . *Rumford, R. I.*
McFee, Raymond Frank . . . . . *Woonsocket, R. I.*
McGill, Chester Francis . . . . . *Marlboro*
McLaughlin, Arthur Otis . . . . . *Haverhill*
McLean, Ernest Alexander . . . . . *Melrose*
McNeil, William . . . . . *E. Boston*
McPherson, Sidney Horace . . . . . *Roxbury*
Merrill, Everett Albert . . . . . *Bridgton, Me.*
Metcalf, Richard . . . . . *Winthrop*
Millett, Frank Alburtus . . . . . *Swampscott*
Miniter, Francis Gabriel . . . . . *Medford*
Moncrieff, William Armitage . . . . . *New Bedford*
Moore, Mary Teresa Veronica . . . . . *Roxbury*
Mott, George Ernest . . . . . *Malden*
Nason, Carleton Emerson . . . . . *Salmon Falls, N. H.*
Neptune, Frederick Willard . . . . . *Cambridge*

O'Reilly, Francis Augustine . . . . . *Lawrence*
Osborn, Stanley Hart . . . . . *Peabody*
Paglia, Jeremiah James . . . . . *Boston*
Papas, Prodromos Nicholas, A.B. (Anatolia) . *Boston*
Partington, Cyrus Brown . . . . . *Fall River*
Pavlides, Socrates Yakovos . . . . . *Boston*
Pavlo, Samuel George . . . . . *Boston*
Perkins, Edward Anderson . . . . . *Natick*
Peters, Henry J. . . . . *Chelsea*
Phaneuf, Louis Eusebe . . . . . *Ware*
PHARM.D. (Mass. Coll. Ph.)
Pigott, Arthur . . . . . *Winthrop*
Pugsley, Charles Bernard . . . . . *Jamaica Plain*
Rabinovitz, Bernard . . . . . *Malden*
Record, Harold Roland . . . . . *E. Braintree*
Reed, Beatrice Alma . . . . . *S. Boston*
Regan, James Joseph . . . . . *S. Boston*
Robert, Marta Beatriz . . . . . *Mayaguez, Porto Rico*
Robins, Samuel . . . . . *Boston*
Robinson, Horace Eddy . . . . . *Bradford*
Roderick, Charles Elvin . . . . . *Taunton*
Rodriguez, Enrique . . . . . *Barranguilla, Colombia*
Ruel, Joseph Adjutor . . . . . *Boston*
Ryder, Walter Irenaeus . . . . . *S. Boston*
Sabine, Harold John . . . . . *Brockton*
Segall, Samuel Kelman . . . . . *Somerville*
Sewall, Edgar Floyd . . . . . *Greenland, N. H.*
Sharood, Howard Cushman . . . . . *Brockton*
Shields, Luke Edward . . . . . *Boston*
Shoub, Clara Francis . . . . . *Boston*
Simmons, Ralph Hayward . . . . . *Brockton*
Stone, Chester Hannibal . . . . . *Melrose*
Sullivan, Daniel Aloysius . . . . . *Lawrence*
Sullivan, Frank Cornelius . . . . . *Lawrence*
Swig, Israel . . . . . *Taunton*
Sylvia, Savero Pacheco . . . . . *New Bedford*
Thoennes, Matthew Nicholas . . . . . *Dorchester*
Thomas, Everett Onslow . . . . . *Boston*
Varrell, William Walton . . . . . *York Harbor, Me.*
Ventrone, Anthony Caesar . . . . . *Providence, R. I.*
PH.C. (R. I. Coll. Ph.)
Villers, Ernest Albert de . . . . . *Oxford*
Wainshel, Perez William . . . . . *Lynn*
Weber, Willis Fletcher . . . . . *S. Wales, N. Y.*

Wheet, Harry Ray . . . . . *Somerville*
Wilson, Charles Henry . . . . . *Chelsea*
Wood, Harvey Nichol . . . . . *Plymouth*
Wright, Arthur Clarendon . . . . . *W. Somerville*
Young, Wallace Edward . . . . . *Taunton*

Special Students

Centervall, Ivan Alexis Teofil, D.M.D. (1904) *Roxbury*
Fraim, Irving William . . . . . *Waltham*
Knowles, Edward Augustine . . . . . *Boston*
Mulvanity, John Joseph . . . . . *Nashua, N. H.*

Post-Graduate

LeBlanc, William, M.D. . . . . *Somerville*

Dental School

[P. O. Address, 416 Huntington Ave., Boston, Mass.]

Third Year

Bagnall, Melville Crawford . . . . . *Roslindale*
Baker, Edwin Carlisle . . . . . *Roslindale*
Becker, Frederick William . . . . . *Hyde Park*
Bliss, Orville Thayer . . . . . *Providence, R. I.*
Brown, Ernest Linwood . . . . . *Norway, Me.*
Burr, Walter Eugene . . . . . *Worthington*
Clegg, William Joseph . . . . . *Providence, R. I.*
Coyne, Francis Joseph . . . . . *Marlboro*
Crerie, Fred Rich . . . . . *Worcester*
Dickinson, George Herbert . . . . . *Meriden, Conn.*
Dingwell, Arthur Roy . . . . . *E. Boston*
Djinivis, Paul Boghos . . . . . *Boston*
Donovan, Timothy Joseph . . . . . *Lawrence*
Doubleday, Clark Otto . . . . . *Springfield*
Dunlop, James Alexander . . . . . *Worcester*
Dyon, Oscar Omer . . . . . *N. Attleboro*
Eldridge, Melville Leroy . . . . . *Wareham*
Flood, Charles Augustine . . . . . *Lynn*
Gilbert, John Royden . . . . . *Waltham*
Given, Carolus Roy . . . . . *Wollaston*
Grant, Frederick Edward . . . . . *E. Dedham*
Haffner, Louis Alfred . . . . . *Lawrence*
Henderson, Francis Randolph . . . . . *Everett*
Hennebery, Philip Augustine . . . . . *Morell, P. E. I.*
Hoy, Frank . . . . . *Fall River*
Jellison, Frederick Green . . . . . *Rowley*
Keith, James Harold . . . . . *Bridgewater*
Keith, William Fownes . . . . . *Havelock, N. B.*
Kelly, Charles Patrick . . . . . *Cambridge*
Kneeland, John James . . . . . *Worcester*
McDonnell, Michael Joseph . . . . . *Holyoke*
Morse, Edwin John . . . . . *Roxbury*
Palmer, Raymond Chester . . . . . *Maynard*
Petzoldt, René Lucien . . . . . *Paramaribo, S. America*
Plaisted, Harold Charles . . . . . *Concord, N. H.*

Regan, Francis White . . . . . *Boston*
Rosenthal, Max . . . . . *Roxbury*
Schlansky, Israel Myer . . . . . *Woonsocket, R. I.*
Shay, Norbert Branley . . . . . *S. Braintree*
Small, Wilbert Merrill . . . . . *Milbridge, Me.*
Smith, Ernest Joseph . . . . . *Ipswich*
Staples, Vincent Joseph . . . . . *Pittsfield*
Steadman, Frederick Weeks . . . . . *Brooklyn, N. Y.*
Sullivan, Anastasia Louise . . . . . *Cambridge*
Thomson, John Nathaniel . . . . . *Methuen*
Walsh, Jeffrey James . . . . . *Fall River*
Wessler, Myron . . . . . *Springfield*

Second Year

Austin, LeRoy Sharman . . . . . *Swampscott*
Barton, Peter Hogan . . . . . *W. Somerville*
Billings, Charles Harper . . . . . *Canton*
Bonney, Albion Paris . . . . . *Quincy*
Branagan, George Henry . . . . . *Natick*
Brown, Guy Edward . . . . . *W. Somerville*
Brown, John Bernard . . . . . *Grand River, P. E. I.*
Brown, Maurice Vivian, A.B. (Bates) . . . . *Norway, Me.*
Bryant, Myron Eldridge . . . . . *Machias, Me.*
Burgess, Ralph Arthur . . . . . *Woburn*
Burke, Eugene Edward . . . . . *Brockton*
Burnham, John Fletcher . . . . . *Gloucester*
Bursten, Bernhardt Bertwell . . . . . *Revere*
Butterfield, Ross Hunt . . . . . *N. Troy, Vt.*
Carlson, Torsten Axel . . . . . *Dorchester*
Carr, George Philip . . . . . *Grafton*
Cassidy, James Owen . . . . . *Boston*
Chessman, John Wesley . . . . . *Abington*
Clark, John Locke . . . . . *Valley Falls, R. I.*
Curtis, Harold Francis . . . . . *Quincy*
Danforth, George Arthur . . . . . *Manchester, N. H.*
Dean, Frank Henry . . . . . *Worcester*
deJong, Jacque . . . . . *S. Boston*
Denning, William Vincent . . . . . *S. Boston*
Derbyshire, Raymond Ashton . . . . . *Lawrence*
Devlin, James Edward . . . . . *Brighton*
Dorr, Russell Ellis . . . . . *Keen's Mills, Me.*
Dupuis, Hector Mederic . . . . . *Worcester*
Estabrook, Philip Dewitt . . . . . *Presque Isle, Me.*

Faulkner, Ralph Lindsay . . . . . *N. Grafton*
Fleming, Timothy Michael . . . . . *Lawrence*
Foley, Maurice Joseph . . . . . *Milford*
Foster, Robert Chesley . . . . . *Dorchester*
Gammon, Fred Battles . . . . . *Brockton*
Gately, Edward John . . . . . *Marlboro*
Gibbons, John Joseph . . . . . *New Bedford*
Golden, John Francis . . . . . *Natick*
Grant, Percy James . . . . . *Lynn*
Graumann, Ernest Gustave . . . . . *Jamaica Plain*
Griffin, Samuel Frederic . . . . . *Portsmouth, N. H.*
Haines, J. Herman . . . . . *Lynn*
Hamilton, Samuel Worcester Fuller . . . . *Newport, Vt.*
Hartigan, Thomas Joseph . . . . . *Providence, R. I.*
Herlihy, David Joseph . . . . . *Fitchburg*
Hurley, William Patrick . . . . . *S. Boston*
Jackson, Gordon Francis . . . . . *Dorchester*
Jenkins, Clarence Edmund . . . . . *E. Sullivan, N. H.*
Jones, Louis Franklin . . . . . *Somerville*
Kaston, Louis . . . . . *Boston*
Kenny, James Francis . . . . . *Worcester*
Kenswil, René . . . . . *Utrecht, Holland*
King, Edward Francis, Jr. . . . . *E. Dedham*
Knight, Joseph King, Jr., A.B. (Dartmouth) . *Hyde Park*
Laffin, Clarence Byron . . . . . *Portland, Me.*
Lambert, Henry Keville . . . . . *Dorchester*
Leonard, John Henry . . . . . *Brockton*
Lockhart, Arthur Alexander . . . . . *Summerside, P. E. I.*
Logue, Owen Joseph . . . . . *Woburn*
Lynch, Edward Mark . . . . . *Lawrence*
MacSween, Frederick William . . . . . *Summerside, P. E. I.*
Manning, Charles Henry . . . . . *Rochester, N. H.*
McKenna, James Joseph . . . . . *New Bedford*
McNamara, William Francis . . . . . *Clinton*
Meade, John James . . . . . *Charlestown*
Merrill, Ernest Samuel . . . . . *Wollaston*
Moody, William Ladd . . . . . *Harwich*
Nader, George . . . . . *Mahalla, Egypt*
Nies, Martin Edward, Jr . . . . . *Swampscott*
Noonan, George Francis . . . . . *Roxbury*
Norton, Richard Henry, Jr. . . . . *Somerville*
O'Connor, Timothy Leo . . . . . *Worcester*
Ogden, James Sherman . . . . . *Northampton*

Osgood, Rose Charlotte . . . . . *Boston*
Parker, Harrison Lindsay . . . . . *Winchester*
Perkins, Fred Lester . . . . . *Franklin, N. H.*
Pinsky, David . . . . . *Medway*
Power, Thomas Edward . . . . . *Westfield*
Price, Harris Wayland . . . . . *Tolland, Conn.*
Qualters, Martin Wilfred . . . . . *Ashuelot, N. H.*
Roberts, Jacob Frederick . . . . . *Medford*
Rockett, Cecilia Marie . . . . . *Dorchester*
Roddy, Charles Augustine . . . . . *Lawrence*
Ryan, Edmund Clement . . . . . *Pawtucket, R. I.*
Ryan, James Edward . . . . . *Oakdale*
Sanborn, John Stevens . . . . . *Woburn*
Soulliere, Joseph Hector . . . . . *Worcester*
Spear, Tyler Whitmore . . . . . *Rockland, Me.*
Springall, George Allen . . . . . *Malden*
Stack, Thomas Paul . . . . . *Hyde Park*
Sullivan, Frank Denis . . . . . *Somersworth, N. H.*
Tannebring, William Charles . . . . . *Three Rivers*
Tierney, James Francis . . . . . *Dorchester*
Wiggins, Leo Chester . . . . . *Holbrook*

First Year

Allen, Frederick Carroll . . . . . *New Bedford*
Allen, Henry Roy . . . . . *Lynn*
Anthony, William Wilton . . . . . *Wakefield*
Askin, John Leo . . . . . *Dorchester*
Bacon, Lester Edward . . . . . *Brockton*
Barrett, Clifton Addison . . . . . *Boston*
Beazley, Ernest Valentine . . . . . *Providence, R. I.*
Begley, Patrick Joseph . . . . . *Lowell*
Betts, Leo Bertram . . . . . *Ellsworth Falls, Me.*
Bickell, Arthur Guy . . . . . *Andover*
Bohaker, Karl Aubrey . . . . . *Somerville*
Briggs, Carl Skillings . . . . . *S. Paris, Me.*
Brown, Thomas Dalton, PH.B. (Brown) . . . *Salem*
Bruce, Frank Bradshaw . . . . . *Shelburne, N. S.*
Burke, Robert Thomas . . . . . *Rutland*
Burtt, Percy Tylor . . . . . *Brockton*
Cadorette, Louis Henry . . . . . *Turners Falls*
Cameron, Hartwell Dyer . . . . . *Boston*
Canarie, Martin Charles . . . . . *Haverhill*
Carpenter, Victor Howard . . . . . *Foxboro*

Carter, Walter James . . . . . *Pembroke, Me.*
Casey, Thomas Frank . . . . . *Somerville*
Cassidy, Gregory Philip . . . . . *Houlton, Me.*
Christman, George . . . . . *Cambridge*
Cleaves, Chester Evander . . . . . *Montpelier, Vt.*
Corry, Robert Joseph . . . . . *Woburn*
Cosgrove, Michael Edward . . . . . *Worcester*
Crowley, Daniel Joseph . . . . . *Charlestown*
Dailey, James William . . . . . *Cambridge*
Dickenson, Henry David . . . . . *Jamaica, B. W. I.*
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Donovan, William Dacey . . . . . *Wakefield*
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Quinlan, Francis Mark . . . . . *Dorchester*
Randall, Howard Bowen . . . . . *Wrentham*
Rounds, Samuel Dean . . . . . *Reading*
Ryder, Harry Clifford . . . . . *Boston*
Savage, Peter Joseph . . . . . *Whitinsville*
Sedgwick, Willard Eaton . . . . . *W. Springfield*
Shedd, Harold Woodbury . . . . . *Taunton*
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Tirk, Nathan Herbert . . . . . *Boston*
Traynor, William Bernard . . . . . *Biddeford, Me.*
Wagner, John Leonard . . . . . *Maynard*
Wass, Alfred Seldon . . . . . *Prospect Harbor, Me.*
Webster, Karl Smith . . . . . *Orleans, Vt.*
Whitham, Edward Henry . . . . . *Providence, R. I.*
Yates, Thomas Henry . . . . . *Taunton*

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Badgley, Louis Albert . . . . . *Portland, Oregon*
Baker, Ralph Vincent . . . . . *Marshfield*
Delano, Frank Sparrow . . . . . *Worcester*
Denvir, William Edward, Jr. . . . . *Somerville*
Dyon, Armond Henry Oswell . . . . . *N. Attleboro*
Fraser, John Callistus . . . . . *Dorchester*
Goldstein, Edward Arthur . . . . . *Malden*
Hamilton, Arthur Stuart . . . . . *Needham*
House, Clarence Ellsworth . . . . . *Dorchester*
McGourty, Garrett Thomas . . . . . *Boston*

SUMMARY

Trustees		29
Directors of the Women		3

CORPS OF INSTRUCTION

Emeritus	3	
President and Professors	54	
Associate Professor	1	
Assistant Professors	16	
Lecturers	3	
Instructors	83	
Demonstrator	1	
Assistant Demonstrators	9	
Assistants	36	
Laboratory Assistants	25	
Total engaged in work of instruction	—	231
Other Officers, not previously counted		23

STUDENTS

GRADUATE SCHOOL		10
SCHOOL OF LIBERAL ARTS:		
Senior	28	
Junior	34	
Sophomore	34	
Freshman	68	
Special	13	—177
ENGINEERING SCHOOL:		
Senior	47	
Junior	52	
Sophomore	41	
Freshman	83	—223
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MEDICAL SCHOOL:		
Fourth Year	81	
Third Year	68	
Second Year	98	
First Year	170	
Special	4	
Post-Graduate	1	—422
DENTAL SCHOOL:		
Third Year	47	
Second Year	93	
First Year	128	
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Total number of students		1128

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Annual Report of the Treasurer
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Catalogue of the Dental School
Announcement of the Engineering School
Announcement of the School of Liberal Arts
Register of Officers and Graduates

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1910-1911

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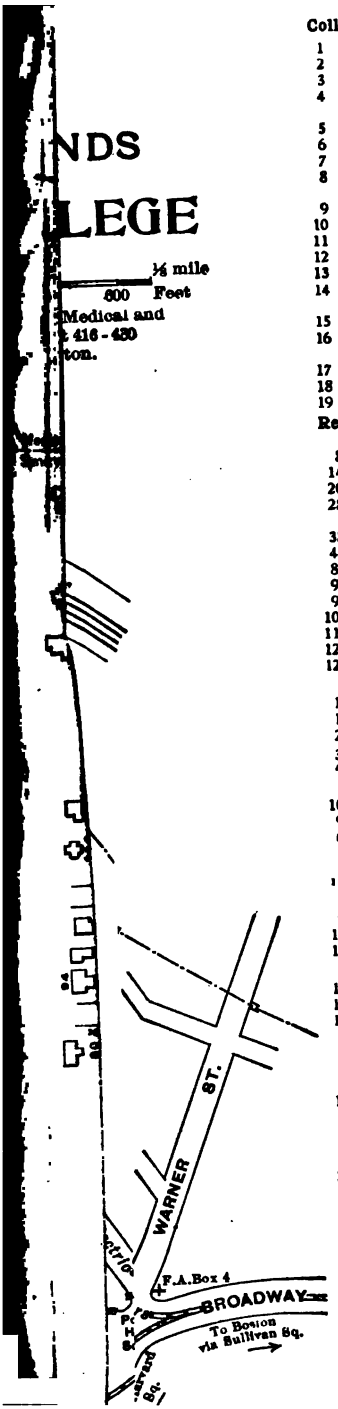

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1 West Hall (dormitory)
2 Packard Hall (Theological class rooms)
3 East Hall (dormitory)
4 Curtis Hall (post-office, class rooms, and dormitory)
5 Chemical Laboratory
6 Dean Hall (dormitory)
7 Men's Gymnasium
8 Barnum Museum (public museum, biological laboratory, and class rooms)
9 Ballou Hall (main offices and class rooms)
10 Goddard Chapel
11 Eaton Memorial Library
12 Paige Hall (Theological School dormitory)
13 Miner Hall (Jackson College class rooms)
14 Robinson Hall (Engineering laboratories and class rooms)
15 Power Station and Forge Shop
16 Bromfield-Pearson Building (Engineering shops and class rooms)
17 Metcalf Hall (dormitory for women)
18 Start House (dormitory for women)
19 Women's Gymnasium

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8 President Hamilton
14 Prof. Anthony
20 " Lewis
28 Richardson House (dormitory for women)
38 Prof. Durkee
48 " Cushman
80 Zeta Psi House
92 Prof. Fay
98 " Bray
106 " Tousey
114 " Knight
124 " Hooper
128 " Kingsley

Sawyer Avenue

13 Delta Upsilon House
14 Prof. Wade
29 Prof. Ransom
37 Prof. H. G. Chase
45 Prof. Earle; Prof. Tucker

Talbot Avenue

101 Mr. Munro
97 Mr. Morley
65 Prof. Wren

Powder House Boulevard

133 Prof. Rockwell

Curtis Street

94 Alpha Tau Omega House
114 Prof. Harmon
136 Mr. Bruce

Packard Avenue

120 Prof. Leonard
123 Theta Delta Chi House
126 Prof. Denison

Latin Way

18 Delta Tau Delta House

College Avenue

184 Prof. Bolles

Dearborn Road

16 Prof. Lambert

Boston Avenue

389 Prof. Stewart

Bellevue Street

16 Sigma Tau Alpha House

Fairmount Street

15 The Commons Club

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Tufts College Catalogue

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OF

TUFTS COLLEGE

1910-1911

SCHOOL OF LIBERAL ARTS

ENGINEERING SCHOOL GRADUATE SCHOOL

MEDICAL SCHOOL DENTAL SCHOOL

CRANE THEOLOGICAL SCHOOL

AND

JACKSON COLLEGE FOR WOMEN

Calendar — 1911

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JUNE

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Tufts College, about four miles from Boston, is accessible by rail and by electric cars. The railway station, "Tufts College," is on the Southern Division of the Boston and Maine Railroad; but goods sent by freight go to North Somerville, Mass., and should be so addressed. The post-office address is "Tufts College, Mass."

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Calendar

1910

DEC. 21. Christmas recess begins, in the Department of Arts and Sciences, Wednesday, 1 P.M.

DEC. 24. Christmas recess begins, Medical and Dental Schools, 1 P.M.

1911

JAN. 2. Christmas recess ends in the Department of Arts and Sciences Monday, 2 P.M.; in the Medical and Dental Schools 9 A.M.

JAN. 28, 30, 31, FEB. 1. Mid-year examinations in the Department of Arts and Sciences

FEB. 1. End of the first half-year in the Department of Arts and Sciences, Wednesday

FEB. 6. Second half-year in the Department of Arts and Sciences begins, Monday. Registration

FEB. 7. Regular exercises begin in the Department of Arts and Sciences, Tuesday, 8 A.M.

FEB. 22. Washington's Birthday, Wednesday. College exercises are suspended.

APR. 2–9. Spring recess in the Medical and Dental Schools

APR. 12. Spring recess in the Department of Arts and Sciences begins, Wednesday evening

APR. 19. Spring recess ends, Wednesday evening

MAY 12. Goddard Prize Reading, Friday, 8 P.M.

MAY 15. Senior Theses in Engineering School must be filed at the office of the Dean before 5 P.M.

MAY 25 to 29. Senior examinations in Engineering School

MAY 30. Memorial Day, Tuesday. College exercises are suspended

JUNE 12, 13, 14, 15. Final examinations in the Department of Arts and Sciences

JUNE 16. Class Day, Friday

JUNE 18. Baccalaureate Sermon, Sunday, 3.30 P.M.

JUNE 21. Fifty-fifth Annual Commencement, Wednesday

JUNE 26. Examinations for admission to the Dental School, Monday, 10 A.M., Ballou Hall, Tufts College

Summer Vacation, Thirteen Weeks

Fall Examination for Admission to the Department of Arts and Sciences and the Medical School

SEPT. 16. Elementary and Advanced French, 9 to 11 A.M.; Elementary and Advanced German, 11 A.M. to 1 P.M.; Elementary and Advanced Greek, Advanced Algebra and Trigonometry, 2 to 5 P.M.

SEPT. 18. Algebra, 9 to 10.30 A.M.; English, 10.30 A.M. to 12.30 P.M. Plane Geometry, 2 to 4 P.M.; Physics, 4 to 5 P.M.; Drawing, 4 to 6 P.M.

SEPT. 19. Elementary and Advanced Latin, 9 to 12 A.M.; Solid Geometry, 9 to 11 A.M.; Natural History (two subjects), 11 A.M. to 1 P.M.; History, 2 to 4 P.M.; Chemistry, 4 to 5 P.M.

SEPT. 11. Fall examinations for the removal of conditions, in the Medical and Dental Schools, begin, 10 A.M.

SEPT. 16. Examinations for admission to the Dental School, Saturday, 10 A.M., Ballou Hall, Tufts College

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SEPT. 21. College year begins, Thursday morning
Registration of all students in the Department of Arts and Sciences

SEPT. 22. All classes meet for announced periods, Friday

SEPT. 23. Regular College exercises begin, Saturday

SEPT. 25. Dental Infirmary opens, 9 A.M.

SEPT. 27. Lectures begin in Medical and Dental Schools, Wednesday, 3 P.M.

OCT. 7. Registration closes in Medical and Dental Schools, 6 P.M.

OCT. 12. Columbus Day. College exercises are suspended

NOV. 15. Russell Lecture, Wednesday, 8 P.M.

NOV. 16. Announcement of Academic Honors, 12 M., Wednesday

NOV. 29. Thanksgiving recess begins in all Departments, Wednesday, 1 P.M.

DEC. 3. Thanksgiving recess ends in all Departments, Sunday evening

DEC. 20. Christmas recess begins, in the Department of Arts and Sciences, Wednesday, 1 P.M.

DEC. 22. Christmas recess begins, Medical and Dental Schools, 1 P.M.

1912

JAN. 1. Christmas recess ends in the Department of Arts and Sciences Monday, 2 P.M.; in the Medical and Dental Schools, 9 A.M.

JAN. 28, 30, 31, FEB 1. Mid-year examinations in the Department of Arts and Sciences

FEB. 7. End of the first half-year in the Department of Arts and Sciences, Wednesday

FEB. 12. Second half-year in the Department of Arts and Sciences begins, Monday. Registration

Historical Sketch

Tufts College was established under a charter granted on the twenty-first day of April, 1852, by the General Court of Massachusetts. Under this charter, as later amended, the College is empowered "to confer such degrees as are usually conferred by colleges in New England." Its organization now comprises the School of Liberal Arts, the Engineering School, the Graduate School, the Crane Theological School, the Medical School, and the Dental School. The School of Liberal Arts prepares for the degrees of Bachelor of Arts and Bachelor of Science. Work in the Engineering School leads to the degree of Bachelor of Science in Engineering. The Graduate School offers the degrees of Master of Arts and Master of Science. The course in the Theological School leads to the degree of Bachelor of Sacred Theology, that in the Medical School to the degree of Doctor of Medicine, and that in the Dental School to the degree of Doctor of Dental Medicine.

The Foundation.—The movement resulting in the founding of the College was set on foot in 1847, through the efforts of the Rev. Thomas J. Sawyer, of New York, the Rev. Hosea Ballou, 2d, of Medford, and the Rev. Thomas Whittemore, of Cambridgeport. After much consideration, the work of raising a fund of one hundred thousand dollars for a foundation was undertaken, under the direction of the Rev. Otis A. Skinner, of Boston. About sixty thousand dollars was obtained in money. Sylvanus Packard gave his bond for twenty thousand dollars additional, and Charles Tufts gave twenty acres of land on Walnut Hill, embracing the present site of the College. Mr. Tufts announced his intention of increasing his gift of land to more than one hundred acres, and thus became the largest benefactor of the young institution, which accordingly received his name. Mr. Packard was a Boston merchant, who from the beginning made the College a peculiar care, and bequeathed to it his entire fortune. Among other benefactors who may be numbered among the founders of the College were Oliver Dean,

who gave it ninety thousand dollars, and Thomas A. Goddard, whose gifts, though unobtrusive, were constant. Mrs. Goddard continued the generosity of her husband, and at her death made a substantial bequest to the College. Dr. William J. Walker also made gifts and bequests amounting to nearly three hundred thousand dollars.

While the College owed its beginning to the effort and the support of members of the Universalist denomination, it was provided by the Legislature in the charter that

"No instructor in said college shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said college, on account of the religious opinions he may entertain."

This provision has always been interpreted by the Trustees and Faculty in its broadest sense. The non-sectarian character of the work of the College is amply shown by the membership of its Faculty and student body. The truth, and not the maintenance of any religious or political doctrine, has been the aim of its research and its instruction.

The Department of Arts and Sciences.— The first Faculty meeting was held October 9, 1854, when there were in College students forming the Sophomore and the Freshman class. The only building at that time was the main College Building, now known as Ballou Hall. The next building to be erected was a small brick dormitory, now Packard Hall. The large dormitory known as East Hall was the next addition to the group, and in 1872 West Hall was opened to students. It was ten years before building operations were renewed by the College. The original Faculty numbered five. The first class, of three members, was graduated in 1857.

At the outset, provision was made for a course of study leading to the degree of Bachelor of Arts. The only feature of its work peculiar to Tufts College in these years of its beginning was the attention given to the study of history. The first President of the College, the Rev. Hosea Ballou, 2d, D.D., was likewise Professor of History and of Intellectual Philosophy, and

gave instruction in history remarkable alike for its quantity and quality, at a time when the study was hardly recognized in American colleges.

Dr. Ballou was succeeded in the presidency by the Rev. Alonzo Ames Miner, D.D., LL.D., who was inaugurated in 1862, and continued in office until 1875, resigning in February of that year. Dr. Miner's incumbency was marked by large financial additions to the College, and by the further growth of a broad and scholarly spirit.

In March, 1875, the Rev. Elmer Hewitt Capen, D.D., was elected to the presidency of the College, vacated by the resignation of President Miner, and he was inaugurated on the second day of June. Dr. Capen's administration, which was characterized by the expansion of the College to university proportions, and was marked by the material and intellectual advance of all departments, was terminated by his death, March 22, 1905.

Rev. F. W. Hamilton, D.D., LL.D., was appointed acting president in 1905, and was inaugurated as president, June 19, 1906.

The Engineering courses were begun in 1869 with a department of Civil Engineering. The great development of electrical science was promptly recognized, and a department of Electrical Engineering was opened to students in 1882, a professorship in the subject being established in 1890. This side of the College work had rapid development: in 1894 the field was broadened by the addition of a course in Mechanical Engineering, and in 1898 by one in Chemical Engineering. In these courses effort has always been made to give thorough practical training. The will of the late Henry B. Pearson, founding the Bromfield-Pearson School, and putting it into the hands of the Trustees of Tufts College to administer, provided a thoroughly-equipped building for technical instruction, of great value in drawing, pattern-making, and in machine and forge work. The Bromfield-Pearson building was completed in the fall of 1894. Robinson Hall, completed in 1900, gives to the technical courses a modern building with every facility for

their work. It was given in memory of the late Charles Robinson, LL. D., sometime President of the Trustees, by his heirs.

In 1881 the late Phineas T. Barnum gave fifty-five thousand dollars for the establishment of the Barnum Museum of Natural History, and by his last will he bequeathed forty thousand dollars more. The main Museum building was completed in 1884. The west wing, containing the new biological laboratories, was erected in 1894. The years 1882 and 1883 saw the completion of Goddard Chapel, given by Mrs. Mary T. Goddard as a memorial of her husband, the first treasurer of the College. Goddard Gymnasium, a gift from the same source, was also completed in 1883. The gymnasium has been enlarged and transformed into what is practically a new building. Dean Hall was erected in 1887 from funds bequeathed by the late Oliver Dean. In the College year 1894-95 two new buildings were opened, in addition to the west wing of the Barnum Museum. These were the Chemical building and Curtis Hall, containing students' rooms, class rooms, and the post-office.

The gift of one hundred thousand dollars from Mrs. Andrew Carnegie secured the erection of an adequate library building, called the Eaton Memorial Library, which was begun in 1905, and put into active service in 1908.

The development of the College in its internal life has been the notable fact of recent years. In 1866 the degree of Bachelor of Philosophy was offered to students who should pursue a prescribed course of two years, the object being to provide for those who had been prepared only in English subjects. This course was maintained until 1875, when it was changed to a course of four years. The requirements for admission were then made the same as for the regular course, except that Greek as a condition of entrance was omitted, and an amount of work in French or German, considerably less than its equivalent, was substituted. The degree of Bachelor of Philosophy has more and more fallen into disuse, in favor of Bachelor of Arts. In 1891 a new course of study, leading to the degree of Bachelor

of Arts, was offered, with an entrance requirement believed to be fully the equivalent of the Greek, in two modern languages. This was one important step taken by the College toward the broadening of its opportunities, but it soon proved to be insufficient. There had been a steady growth for many years in the amount of work done, and in the number of departments of learning represented. Two new departments had been instituted in 1892, in response to the tendencies of educational development,— those of Biology and History. Departments of Music and Philosophy have since been added, the work in Political Science has been broadened, and provision made for the study of Public Law. In the fall of 1893 it seemed possible to take another step and to put into operation the present plan of work, which is believed to be an approach to a rational co-ordination and connection of the college and university systems. The principle which governed this adjustment of the College curriculum has been applied to the entrance requirements.

There were opened in 1895 courses of four years each in Biology, Chemistry, General Science, and Medical Preparatory work, leading to the degree of Bachelor of Science, and accessible to graduates of all good high schools. The course in Biology was withdrawn in 1905. Bachelors of Science may, if they desire, go on to the attainment of the degree of Bachelor of Arts.

In response to a pressing demand the College was, in the summer of 1892, opened to women on the same terms as to men. After seventeen years of trial, it appeared to both Trustees and Faculty that the interests of the sexes could be better served by separate instruction. The necessary amendments to the Charter were procured and, in the fall of 1910, Jackson College for Women was opened as an affiliated institution. Jackson College is under the direction of the Trustees and President of Tufts College. It has a Dean who is a woman. Otherwise its Faculty is identical with that of Tufts. This arrangement assures to the students in Jackson every educational facility offered by Tufts

under conditions more favorable than were formerly possible. In the fall of 1894 there was provided for the accommodation of women students, Metcalf Hall, the gift of Albert Metcalf, of Newton. Start House and Richardson House also offer home-like rooms for women students.

The Professional Schools.—The will of Mr. Packard required that a professor of Christian Theology should be maintained from the income of funds bequeathed by him. The Rev. Thomas J. Sawyer, D.D., was elected Packard Professor in 1869. This was the beginning of the Theological School. In 1882 the school had developed so that its Faculty received a definite organization, and Dr. Sawyer became the first Dean, retaining the office until his retirement as Packard Professor Emeritus in 1892. He was succeeded by the present Dean, Rev. Dr. Charles H. Leonard. From the erection of West Hall until the completion of the separate buildings of the school, the western side of West Hall was occupied by the Divinity School. In 1892, by the gift of ex-President Miner, the school was provided with Miner Hall, containing the library, class rooms, chapel, and reception room; and at the same time, largely through the efforts of the Dean, the money was obtained to build Paige Hall, a dormitory for students of the Theological School.

In 1903 a five-year course was offered to students of divinity, combining subjects required for a proper professional equipment with studies that look toward liberal culture. This course is now arranged to cover six years. At its successful completion the degrees A.B. and B.D. are both awarded. There is also a four-year course, leading to B. D.

In 1906 the name of the Divinity School was changed to the Crane Theological School, in recognition of a gift of one hundred thousand dollars from the estate of the late Thomas Crane of New York, whose son, Albert Crane, '63, thus carried out the expressed purpose of his father.

In 1893 Tufts College met what seemed to be a need of the community by opening the Tufts Medical School. The growth

of the school in efficiency and numbers justified its institution. The course is four years in length. Women are admitted upon the same terms as men.

The Medical School found its complement in the Tufts Dental School, organized in 1899 by the absorption of the Boston Dental College, which was incorporated in 1868, and has a numerous body of alumni. The equipment, funds, and good will of this school passed to Tufts College.

Administration.—The control of the College is vested by the charter in a self-perpetuating body of Trustees, not to exceed thirty in number. As the College has matured the number of its alumni upon the Board of Trustees has steadily increased. To give the Alumni as a whole a direct represenation in the administration, a Board of Overseers was instituted, which continued from 1899 till 1907. At this time an amendment to the college charter was passed by the Massachusetts legislature, permitting the election of a certain proportion of Trustees from and by the alumni themselves.

THE COLLEGE CHARTER

SECTION 1. B. B. Mussey, Timothy Cotting, Richard Frothingham, Jr., their associates and successors, are hereby constituted a body corporate by the name of the Trustees of Tufts College, in Medford, and they and their successors, and such as shall be duly elected members of said corporation, shall be and remain a body corporate by that name forever. And for the orderly conducting of the business of said corporation, the said Trustees shall have power and authority, from time to time, as occasion may require, to elect a President, Vice-President, Secretary and Treasurer, and such other officers of said corporation as may be found necessary, and to declare the duties and tenures of their respective offices; and also to remove any Trustee from the same corporation, when in their judgment he shall be rendered incapable, by age or otherwise, of discharging the duties of his office, or shall neglect or refuse to perform the same; and also, from time to time, to elect new members of the said corporation; provided, nevertheless, that the number of members shall never be greater than thirty.

SEC. 2. The said corporation shall have full power and authority to determine at what times and places their meetings shall be holden, and the manner of notifying the Trustees to convene at such meetings, and also, from time to time, to elect a President of said College, and such professors,

tutors, instructors, and other officers of the said College as they shall judge most for the interest thereof, and to determine the duties, salaries, emoluments, responsibilities, and tenures of their several offices. And the said corporation are further empowered to purchase or erect, and keep in repair, such houses and other buildings as they shall judge necessary for the said College; and also to make and ordain, as occasion may require, reasonable rules, orders, and by-laws, not repugnant to the Constitution and Laws of this Commonwealth, with reasonable penalties, for the good government of the said College, and for the regulation of their own body; and also to determine and regulate the course of instruction in said College, and to confer such degrees as are usually conferred by colleges in New England; provided, nevertheless, that no corporate business shall be transacted at any meeting unless one-third, at least, of the Trustees are present.

SEC. 3. The said corporation may have a common seal, which they may alter or renew at their pleasure, and all deeds sealed with the seal of said corporation, and signed by their order, shall, when made in their corporate name, be considered in law as the deeds of said corporation; and said corporation may sue and be sued in all actions, real, personal, or mixed; and may prosecute the same to final judgment and execution by the name of the Trustees of Tufts College; and said corporation shall be capable of taking and holding in fee simple, or any less estate, by gift, grant, bequest, devise, or otherwise, any lands, tenements, or other estate, real or personal, provided, that the clear annual income of the same shall not exceed two hundred thousand dollars.*

SEC. 4. The clear rents and profits of all the estate, real and personal, of which the said corporation shall be seized and possessed, shall be appropriated to the endowment of said College in such manner as shall most effectually promote virtue and piety, and learning in such of the languages, and of the liberal and useful arts and sciences, as shall be recommended from time to time by the said corporation, they conforming to the will of any donor or donors in the application of any estate which may be given, devised, or bequeathed, for any particular object connected with the College.

SEC. 5. No instructor in said College shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said College on account of the religious opinions he may entertain.

SEC. 6. The Legislature of this Commonwealth may grant any further powers to, or alter, limit, annul, or restrain any of the powers vested by this act in the said corporation, as shall be found necessary to promote

* The limitation as to income has been removed by statute.

the best interests of the said College, and more especially may appoint and establish overseers or visitors of the said College, with all necessary powers for the better aid, preservation, and government thereof.

SEC. 7. The granting of this Charter shall never be considered as any pledge on the part of the Government that pecuniary aid shall hereafter be granted to the College.

CHAPTER 632 OF THE ACTS OF 1910

AN ACT

TO AUTHORIZE THE TRUSTEES OF TUFTS COLLEGE TO MAINTAIN A SEPARATE COLLEGE FOR WOMEN

BE it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. The corporation known as the "Trustees of Tufts College" may establish and maintain for the education of women exclusively a college to be known as the "Jackson College for Women," and may appropriate and set apart for the maintenance thereof any funds now held by it designated by the donors to be for the education of women, and all property, real and personal, hereafter received by gift, grant, devise or bequest for that purpose.

SECTION 2. All the provisions contained in the act establishing the Trustees of Tufts College, and in the acts in amendment thereof, shall relate to the Jackson College for Women, so far as applicable thereto, except as provided in this act.

SECTION 3. The corporation may, in the name of Jackson College for Women, confer any of the degrees which it by law is authorized to confer: provided, however, that degrees so conferred in course shall be conferred exclusively upon women. It may also adopt and use upon diplomas and other written instruments issued in the Jackson College for Women, a seal of a design differing from the common seal of the corporation.

SECTION 4. Section two of chapter two hundred and fifty-five of the acts of the year nineteen hundred and seven is hereby amended so as to read: Section 2. All persons who for five years have held a degree from Tufts College or from Jackson College for Women, conferred in regular course, and all persons who have received from said colleges an honorary degree, shall be entitled to vote for said ten members. And any person who for ten years has held from said colleges a degree conferred in regular course shall be eligible to be elected a member of said corporation: provided, always, that at least seven of the ten members so elected by the Alumni shall hold from Tufts College the first degree in arts or sciences.

SECTION 5. This act shall take effect upon its passage.

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MEMBER OF N. E. COLLEGE ENTRANCE CERTIFICATE BOARD: Professor H. G. Chase.

MEMBER OF COLLEGE EXTENSION COMMISSION: Dean Wren.

* The Faculty of Arts and Sciences consists of the Faculties of the School of Liberal Arts, the Engineering School, the Graduate School, and the Crane Theological School, constituting one body for the discharge of certain administrative functions.

Requirements for Admission

Candidates for admission to the Department of Arts and Sciences must have received adequate preparation in certain subjects falling in two groups, known respectively as the Primary and the Secondary Group. A unit represents a year's study in any subject in a secondary school, representing approximately a quarter of a full year's work.

The Primary Group

Elementary English, 3;
*An Elementary Foreign Language, ancient or modern, 2;
Elementary History, 1;
Elementary Algebra, 1½;
Plane Geometry, 1.

Candidates for admission must present all the subjects of the Primary Group, and a certain part of the subjects of the Secondary Group, depending upon the degree in view. No subject offered in the Primary Group can be counted in the Secondary Group.

The Secondary Group

ELEMENTARY

Greek, 2
Latin, 2
French, 2
German, 2
Chemistry, 1
Physics, 1
Botany, 1
Zoology, 1
Geology and Geography, 1
Mechanical Drawing, 1
Freehand Drawing, 1
Shop Work, 1
Economics, ½
Musical Appreciation, ½
Music (Harmony), ½

*Candidates for the degree of Bachelor of Science in General Science, in Chemistry, or in the Medical Preparatory Course, should present Elementary German.

Engineering students will find it an advantage to present both French and German. Preparatory work in Modern Languages above the elementary requirements may be counted toward the degree of B.S. in Engineering. But college credit for work done in the secondary school is given only on examination or after the student has satisfactorily continued the subject in college.

INTERMEDIATE*

Latin, 1	German, 1
French, 1	

ADVANCED*

Greek, 1	Algebra, ½
Latin, 1	Trigonometry, ½
French, 1	Solid Geometry, ½
German, 1	Counterpoint, ½
History	Pianoforte, Voice, or Violin, ½

Candidates for the degree of Bachelor of Arts or Bachelor of Divinity must submit, in addition to the five subjects of the Primary Group, a selection of subjects from the Secondary Group aggregating 6½ units, according to the valuation indicated above. Candidates for the degree of Bachelor of Science in the School of Liberal Arts or in the Engineering School must submit from the Secondary Group subjects aggregating 3 units. Note: Beginning with the class entering in 1912, candidates for the degree of Bachelor of Science in the School of Liberal Arts will be required to submit subjects from the Secondary Group aggregating 6½ units, and candidates for the same degree in the Engineering School, subjects aggregating 5½ units.

The following conditions are to be observed:—

1. The 6½ units for the course leading to A.B., or for that leading to B.D., must include those representing one advanced ancient language.

2. The 3 units for any course in engineering must include ½ unit in solid geometry.

Detailed information concerning the amount and character of the work demanded in preparation will be found on the following pages.

*The credit for advanced subjects, as here given, is in addition to the credit for the corresponding elementary subjects.

Detailed Statement of Requirements

Elementary English. *Three units.*

Preparation in English has two main objects: (1) command of correct and clear English, spoken and written; (2) ability to read with accuracy, intelligence, and appreciation.

The first object requires instruction in grammar and composition. English grammar should ordinarily be reviewed in the secondary school; and correct spelling and grammatical accuracy should be rigorously exacted in connection with all written work during the four years. The principles of English composition governing punctuation, the use of words, paragraphs, and the different kinds of whole composition, including letter-writing, should be thoroughly mastered; and practice in composition, oral as well as written, should extend throughout the secondary school period. Written exercises may well comprise narration, description, and easy exposition and argument based upon simple outlines. It is advisable that subjects for this work be taken from the student's personal experience, general knowledge, and studies other than English, as well as from his reading in literature. Finally, special instruction in language and composition should be accompanied by concerted effort of teachers in all branches to cultivate in the student the habit of using good English in his recitations and various exercises, whether oral or written.

The second object is sought by means of two lists of books, headed respectively *reading* and *study*, from which may be framed a progressive course in literature covering four years. In connection with both lists, the student should be trained in reading aloud and be encouraged to commit to memory some of the more notable passages, both in verse and in prose. As an aid to literary appreciation, he is further advised to acquaint himself with the most important facts in the lives of the authors whose works he reads, and with their place in literary history.

GROUP A

READING.— The aim of this course is to foster in the student the habit of intelligent reading, and to develop a taste for good

literature, by giving him a first-hand knowledge of some of its best specimens. He should read the books carefully, but his attention should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads.

*For Students Entering in 1911**

Shakespeare's The Merchant of Venice and Julius Cæsar; the Sir Roger de Coverley Papers in the Spectator; Franklin's Autobiography; Scott's The Lady of the Lake and Ivanhoe; Hawthorne's The House of the Seven Gables; Macaulay's Lays of Ancient Rome; Tennyson's Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur; Dickens's A Tale of Two Cities.

*For Students Entering in 1912**

Shakespeare's As You Like It and Julius Cæsar; Franklin's Autobiography; Goldsmith's The Deserted Village; Dickens's A Tale of Two Cities; George Eliot's Silas Marner; Irving's Sketch Book; Scott's The Lady of the Lake; Byron's Mazeppa and The Prisoner of Chillon; Macaulay's Lays of Ancient Rome.

For Students Entering in 1913, 1914, and 1915

With a view to large freedom of choice, the books provided for reading are arranged in the following groups, from which at least ten units are to be selected, two from each group. Each unit is set off by semicolons.

I. The Old Testament, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; the Odyssey, with the omission, if desired, of Books I,

* The books for the classes entering in 1911 and 1912 are selected from the list adopted by the Conference on Uniform Entrance Requirements in English, at meetings held in Newark, N. J., February 22, 1905, February 22, 1908, and February 22, 1909. Candidates may make other selections from that list, provided they give notice of their intention to present these books on or before the first day of February preceding the examination. The list will be furnished to secondary schools upon application to the Secretary of Tufts College.

II, III, IV, V, XV, XVI, XVII; the Iliad, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI; Virgil's Æneid. The Odyssey, Iliad, and Æneid should be read in English translations of recognized literary excellence.

For any unit of this group a unit from any other group may be substituted.

II. Shakespeare's Merchant of Venice; Midsummer Night's Dream; As You Like It; Twelfth Night; Henry the Fifth; Julius Cæsar.

III. Defoe's Robinson Crusoe, Part I; Goldsmith's Vicar of Wakefield; either Scott's Ivanhoe, or Scott's Quentin Durward; Hawthorne's House of the Seven Gables; either Dickens's David Copperfield, or Dickens's Tale of Two Cities; Thackeray's Henry Esmond; Mrs. Gaskell's Cranford; George Eliot's Silas Marner; Stevenson's Treasure Island.

IV. Bunyan's Pilgrim's Progress, Part I; The Sir Roger de Coverley Papers in the Spectator; Franklin's Autobiography (condensed); Irving's Sketch Book; Macaulay's Essays on Lord Clive and Warren Hastings; Thackeray's English Humourists Selections from Lincoln, including at least the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the Last Public Address, and Letter to Horace Greeley, along with a brief memoir or estimate; Parkman's Oregon Trail; either Thoreau's Walden, or Huxley's Autobiography and selections from Lay Sermons, including the addresses on Improving Natural Knowledge, A Liberal Education, and A Piece of Chalk; Stevenson's Inland Voyage and Travels with a Donkey.

V. Palgrave's Golden Treasury (First Series), Books II and III, with especial attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's Elegy in a Country Churchyard, and Goldsmith's Deserted Village; Coleridge's Ancient Mariner, and Lowell's Vision of Sir Launfal; Scott's Lady of the Lake; Byron's Childe Harold, Canto IV, and Prisoner of Chillon; Palgrave's Golden Treasury (First Series), Book IV, with especial attention to Wordsworth, Keats, and Shelley; Poe's Raven, Longfellow's Courtship of Miles Standish, and Whit-

tier's Snow Bound; Macaulay's Lays of Ancient Rome, and Arnold's Sohrab and Rustum; Tennyson's Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur; Browning's Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa — Down in the City.

GROUP B*

STUDY.— This part of the requirement is intended as a natural and logical continuation of the student's earlier reading, with greater stress laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions. For this close reading, a play, a group of poems, an oration, and an essay, are provided, as follows:

For Students Entering in 1911

Shakespeare's Macbeth; Milton's Lycidas, Comus, L'Allegro, and Il Penseroso; either Burke's Speech on Conciliation with America, or both Washington's Farewell Address and Webster's First Bunker Hill Oration; either Macaulay's Life of Johnson, or Carlyle's Essay on Burns.

For Students Entering in 1912

Shakespeare's Macbeth; Milton's Comus, L'Allegro, and Il Penseroso, or Tennyson's Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur; either Burke's Speech on Conciliation with America, or both Washington's Farewell Address and Webster's First Bunker Hill Oration; either Macaulay's Life of Johnson, or Carlyle's Essay on Burns.

* The important changes that go into effect with 1913 consist of a greater emphasis upon formal grammar, rhetorical structure and, in the books under Group B, the study of details. Meanwhile, schools desiring to be acquainted with the precise requirements for 1911 and 1912 are advised to send for the catalogue of 1908-09. The older form of statement is omitted from this catalogue to save space. But a student adequately prepared according to the requirements here printed will have no difficulty in meeting the earlier requirements.

For Students Entering in 1913, 1914, 1915

Shakespeare's Macbeth; Milton's L'Allegro, Il Penseroso, and Comus; either Burke's Speech on Conciliation with America, or both Washington's Farewell Address and Webster's First Bunker Hill Oration; either Macaulay's Life of Johnson, or Carlyle's Essay on Burns.

Examination.

However accurate in subject-matter, no paper will be considered satisfactory if seriously defective in punctuation, spelling, or other essentials of good usage.

In 1913, and thereafter until further notice, the examination will be divided into two parts, one of which may be taken as a preliminary, and the other as a final.

The first part of the examination will be upon ten units chosen, in accordance with the plan described above, from the lists headed *reading;* and it may include also questions upon grammar and the simpler principles of rhetoric, and a short composition upon some topic drawn from the student's general knowledge or experience. On the books prescribed for reading, the form of the examination will usually be the writing of short paragraphs on several topics which the candidate may choose out of a considerable number. These topics will involve such knowledge and appreciation of plot, character-development, and other qualities of style and treatment as may be fairly expected of boys and girls. In grammar and rhetoric, the candidate may be asked specific questions upon the practical essentials of these studies, such as the relation of the various parts of a sentence to one another, the construction of individual words in a sentence of reasonable difficulty, and those good usages of modern English which one should know in distinction from current errors.

The second part of the examination will include composition and those books comprised in the list headed *study*. The test in composition will consist of one or more essays, developing a theme through several paragraphs, the subjects to be drawn from the books prescribed for *study*, from the candidate's other

studies, and from his personal knowledge and experiences quite apart from reading. For this purpose the examiner will provide several subjects, perhaps five or six, from which the candidate may make his own selections. The test on the books prescribed for study will consist of questions upon their content, form, and structure, and upon the meaning of such words, phrases, and allusions as may be necessary to an understanding of the works and an appreciation of their salient qualities of style. General questions may also be asked concerning the lives of the authors, their other works, and the periods of literary history to which they belong.

In place of the examination in Elementary English a candidate may offer the examination of the College Entrance Examination Board in English *a* and *b*.

Elementary German. *Two units.*

It is expected that the candidate will have studied the subject in a systematic course for two school years, each covering the equivalent of 120 sixty-minute hours, during which special attention will have been given to pronunciation and to writing from dictation, as well as to the use of clear and idiomatic English in translation.

The examination will consist of two parts: —

(*a*) The translation into German of easy English sentences, to test the candidate's knowledge of the following subjects: the declension of nouns, adjectives, and pronouns; the conjugation of weak and the more frequently recurring strong verbs; the prepositions and cases which they govern; the simpler uses of modal auxiliaries; the elementary rules of syntax and word order. Proficiency may also be tested by questions on these topics.

(*b*) The translation at sight of easy German prose. It is believed that the requisite facility may be acquired by the reading of from two to three hundred pages of easy German, with preference given to narrative style.

[The following list is made up from works suitable for reading in preparation for this examination; Anderson's Bilderbuch ohne Bilder; Arnold's Fritz auf Ferien; Baumbach's Schwiegersohn: Heyse's Hochzeit

auf Capri; Storm's Immensee; Leander's Träumereien; Roth's Ein nordischer Held; Benedix, Der Prozess; Wilhelmi's Einer muss heiraten; Fulda's Das verlorene Paradies.]

In place of the examination in Elementary German a candidate may offer the examination of the College Entrance Examination Board in German *a*.

Intermediate German. *One unit.*

It is expected that the candidate will have pursued, in addition to the work done in preparation for Elementary German, an additional year's work of 120 hours. He should thus have acquired the ability to translate with considerable facility ordinary prose, similar to that of his preparatory course, and to answer briefly in German questions asked in that language by the instructor. Oral practice and dictation should be continued in this third year and a somewhat thorough acquaintance obtained with the rules of syntax, particularly with the subjunctive and infinitive moods; attention should also be given to the simpler facts of word formation — roots, prefixes and suffixes.

The examination will consist of two parts: —

(*a*) The translation into German of a connected passage of simple English, paraphrased from some German text.

(*b*) The translation at sight of passages of ordinary German prose. It is believed that the requisite facility may be acquired by reading in addition to the amount stated for Elementary German, about four hundred pages of narrative and dramatic prose and verse.

[The following list is made up from works suitable for reading in preparation for this examination: Ebner-Eschenbach's Freiherren von Gemperlein; Gerstäcker's Irrfahrten; Hoffmann's Historische Erzählungen; Meyer's Gustav Adolfs Page; Riehl's Burg Neideck und Fluch der Schönheit; Freitag's Aus dem Staat Friedrichs des Grossen, die Journalisten; Schiller's Geisterseher, Neffe als Onkel, and Balladen; Scheffel's Trompeter von Säkkingen.]

In place of the examination in Intermediate German a candidate may offer the examination of the College Entrance Board in German *b*.

Advanced German. *One unit.*

This examination is open to candidates who have had the equivalent of a four years' course, with an average of 120 full hour periods per year. At the end of this course the student should be able to read, after brief inspection, any (save technical) modern German literature, if free from unusual textual difficulties; to put into German a passage of simple English prose, or to write in that language a brief theme on some assigned topic within his range; and to answer in German questions relating to the lives and certain works of the authors studied.

The examination will consist of three parts: —

(*a*) The writing in German of a paragraph, original or translated.

(*b*) The translation into English of extracts from at least three distinctively different authors. It is believed that the requisite facility may be acquired by reading in addition to the amount mentioned under Intermediate German, about five hundred pages of good literature in prose and verse.

(*c*) An oral test of proficiency in hearing and pronouncing German.

[The following list is made up from works suitable for reading in preparation for this examination: Fouqué's Undine; Scheffel's Ekkehard; Ludwig's Zwischen Himmel und Erde; Freytag's Soll und Haben; Hauff's Lichtenstein; Goethe's Dichtung und Wahrheit (extracts), Die neue Melusine, Hermann und Dorothea; Lessing's Minna von Barnhelm, Schiller's Wilhelm Tell, Jungfrau von Orleans, Geschichte des dreissigjährigen Krieges (third book); Grillparzer's Sappho; Kleist's Prinz von Homburg; Fulda's Talisman.]

In place of the examination in Advanced German, a candidate may offer the examination of the College Entrance Examination Board in German *bc*.

Elementary French. *Two units.*

It is expected that the candidate will have studied the subject in a systematic course for two school years, each covering the equivalent of 120 sixty-minute hours, during which special attention will have been given to pronunciation and to writing

from dictation, as well as to the use of clear, idiomatic English in translation.

The examination will consist of two parts: —

(*a*) The translation into French of easy English sentences to test the candidate's knowledge of the following subjects: the conjugation of the regular and the most frequently recurring irregular verbs; the forms and positions of personal pronouns; the uses of the other pronouns and of possessive, demonstrative, and interrogative adjectives; the variation of nouns and adjectives for gender and number (except rare cases); the partitive construction. Proficiency may also be tested by questions on these topics.

(*b*) The translation at sight of a passage of easy French. It is believed that the requisite facility may be acquired by the reading of not less than three hundred and fifty pages of simple prose, with preference given to narrative.

[The following list is made up from works suitable for reading in preparation for this examination: The easier stories of Daudet, Verne, and Erckmann-Chatrian; Foa's Le petit Robinson and Contes biographiques; Enault's Le Chien du Capitaine; Malot's Sans Famille; About's Le Roi des Montagnes; Labiche and Martin's La Poudre aux Yeux and Le Voyage de M. Perrichon; Sarcey's Le Siège de Paris.]

In place of the examination in Elementary French a candidate may offer the examination of the College Entrance Examination Board in French *a*.

Intermediate French. *One unit.*

It is expected that the candidate will have passed, in addition to the work done in preparation for Elementary French, an additional year's work of 120 hours. He should thus have acquired the ability to translate with facility ordinary prose or verse similar to that of his preparatory course, and to answer briefly in French questions asked in that language by the instructor. Oral practice and dictation should therefore be continued in this third year, together with a more detailed study of syntax, particularly of the use of moods and tenses, and of word formation and common idiomatic phrases.

The examination will consist of two parts: —

(*a*) The translation into French of a connected passage of simple English.

(*b*) The translation at sight of passages of ordinary French prose or dramatic verse. It is believed that the requisite facility may be acquired by reading, in addition to the amount required for Elementary French, not less than four hundred pages of prose and verse, preference still being given to narrative form.

[The following list is made up from works suitable for reading in preparation for this examination: About's stories; Daudet's La Belle-Nivernaise; La Brète's Mon Oncle et mon Curé; Loti's Pêcheur d'Islande; George Sand's Les Maîtres Mosaïstes; Mérimée's Colomba; Thierry's Récits des Temps mérovingiens; Thiers's L'Expédition de Bonaparte en Egypte; Vigny's La Canne de Jonc; Corneille's Horace; Molière's L'Avare and Le Bourgeois Gentilhomme; Racine's Athalie; Augier and Sandeau's Le Gendre de M. Poirier; Coppée's poems.]

In place of the examination in Intermediate French a candidate may offer the examination of the College Entrance Examination Board in French *b*.

Advanced French. *One unit.*

This examination is open to candidates who have had the equivalent of a four year's course, with an average of 120 full hour periods per year. At the end of this course the student should be able to read at sight, with the help of a vocabulary of special or technical expressions, difficult French of not earlier than the seventeenth century; to write in French a short essay on some simple subject connected with the works read in preparation, and to bear his part in a simple conversation in French.

The examination will consist of three parts: —

(*a*) The writing in French of an original passage of at least 150 words on some assigned subject.

(*b*) The translation into English of extracts from at least three distinctly different authors. It is believed that the requisite facility may be acquired by reading, in addition to the amount mentioned under Intermediate French, from six hundred

to one thousand pages of standard French, inclusive of works merely commented upon in class.

(*c*) An oral test of proficiency in hearing and pronouncing German.

[The following list is made up from works suitable for reading in preparation for this examination: Taine's Origines de la France contemporaine; Sainte-Beuve's Causeries du Lundi (Holt Ed.); Voltaire's Prose (Heath Ed.); Balzac's La Recherche de l'Absolu; Dumas' Les trois Mousquetaires (Ginn Ed.); Pelissier's Anthologie des Prosateurs français contemporains (Paris, Delagrave Ed.); Racine's Andromaque, Britannicus, Athalie; Corneille's Cinna and Polyeucte; Molière's Les Précieuses Ridicules; Beaumarchais' Mariage de Figaro; Hugo's Hernani and Ruy Blas.]

In place of the above, a candidate may offer the examination of the College Entrance Examination Board in French *bc*.

Elementary Latin. *Two units.*

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course for two years.

It will consist of two parts: —

(*a*) The translation at sight of passages of simple Latin prose.

(*b*) Questions on grammar, to test the candidate's knowledge of ordinary inflections and syntax.

The reading in preparation should be not less in amount than Cæsar, Gallic War, I—IV.

In place of the examination for two units in Elementary Latin a candidate may offer the following examinations of the College Entrance Examination Board.

Old Requirements, *a* i and *b*.

New Requirements, 1 and 3.

Intermediate Latin. *One unit.*

The examination to test three years of preparation will consist of three parts: —

(*a*) The translation at sight of passages of simple Latin prose.

(*b*) An examination on Cicero's Orations directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms.

(*c*) The translation into Latin prose of simple English sentences, based on the prose works ordinarily read.

The reading in preparation should be not less than Cæsar, Gallic War, I—I V; Cicero, the Orations against Catiline, for Archias, and on the Manilian Law; or the full requirement in Vergil (see Advanced Latin) may be presented in place of Cicero. Equivalents will be accepted in all cases.

In place of the examination in Intermediate Latin a candidate may offer the following examinations of the College Entrance Examination Board.

Old Requirements, *a* i and ii, *b*, and *c* or *d*.

New Requirements, 1, 2, 3, and 4 or 5.

Advanced Latin. *One unit.*

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course for four years. It will consist of two parts: —

(*a*) The translation at sight of passages of Latin prose and verse, with questions on the ordinary forms, constructions, and idioms, and especially on prosody.

(*b*) The translation into Latin prose of a passage of connected narrative.

The reading in preparation for advanced Latin should be not less than Cæsar, Gallic War, I—IV; Cicero, six orations (including the Manilian Law); Vergil, Æneid, I—VI. Equivalents will be accepted, but prose must not be substituted for verse.

Practice in reading at sight, and constant training in Latin Composition should form an important part of the preparation.

In place of the examination in Advanced Latin a candidate may offer the following examinations of the College Entrance Examination Board.

Old Requirements, *a* i, *b*, *c*, *l*, *p*, and *q* or *dq*.

New Requirements, 1, 3, 4, 5, 6.

Elementary Greek. *Two units.*

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course for two years.

It will consist of two parts, which cannot be taken separately: —

(*a*) The translation at sight of passages of simple Attic prose.

(*b*) An examination on Xenophon's Anabasis, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms of the language.

Before taking the elementary examination the candidate should have read, in addition to the usual grammar work, at least four books of Xenophon's Anabasis, or an equivalent.

In place of the examination in Elementary Greek a candidate may offer the following examinations of the College Entrance Examination Board.

Greek *a* i and ii, *b*, and *g*.

Advanced Greek. *One unit.*

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course for three years. The two parts of the examination may be taken separately: —

(*a*) The translation at sight of an average passage of Homer; with questions on ordinary forms, constructions, and idioms, and on prosody.

(*b*) The translation into Attic prose of a passage of connected English narrative. The passage set for translation will be based on some portion of the Greek prose works usually read in preparation for college.

Before taking the examination in Advanced Greek the candidate should have completed at least four books of Xenophon's Anabasis, or their equivalent in Attic prose, and six books of Homer's Iliad, or their equivalent in the Odyssey. It is recommended that Greek composition accompany all stages of the preparation, and that the pupil be practiced in reading Greek aloud from the beginning of his course.

In place of the examination in Advanced Greek a candidate may offer the following examinations of the College Entrance Examination Board.

Greek *a* i, *b*, *c* or *ch*, *f*, and *g*.

Elementary History. *One unit.*

One of the following: —

1. Greek and Roman History. (*a*) The history of Greece to the death of Alexander, with due reference to Greek life, literature, and art, as treated in the histories of Botsford, Oman, West, or Myers. (*b*) The history of Rome to the accession of Commodus, with due reference to Roman literature and government. Such texts as those of Morey, Botsford, West, or Allen will indicate the character of the work desired.

While the periods indicated above will be accepted as satisfying the entrance requirements in ancient history, it is strongly recommended that the study of the history of Greece be continued to the conquest of Greece by Rome, and that the history of Rome be pursued to the fall of the Western Empire.

This does not necessarily imply any increase in the time devoted to Greek and Roman history.

2. English and American History. (*a*) The history of England, with due reference to social and political development. The histories of Andrews, Larned, and Montgomery will indicate the character of the work expected. (*b*) The history and government of the United States. Such texts as McLaughlin's History of the American Nation, Johnston's or Channing's History of the United States, and Fiske's Civil Government should be used.

3. American history and civil government. A more extended and detailed study than is represented by 2 *b* above.

It is recommended that all candidates for admission to the courses leading to the degree of A.B. or B.D. should offer Greek and Roman history.

The elementary requirement in history implies one year's work of not less than five periods a week. Equivalents for the subjects named above will be accepted, but candidates desiring to offer substitutes must give notice to the Secretary of the Faculty at least one month previous to the time set for the

examination. Work in the text-book should be constantly accompanied by collateral reading. The attention of teachers is called to the Report of the Committee of Seven, published by the Macmillan Company, New York, under the title, "The Study of History in Schools."

In place of any one of the examinations described above a candidate may offer any one of the four examinations in History of the College Entrance Examination Board.

Advanced History. *One unit.*

One of the following: —

1. The history of Greece and Rome, as described above, for those only who have offered English and American history or American history and civil government as primary subjects.

2. The history of England and the United States, as described above, for those only who have offered Greek and Roman history as primary subjects.

3. American history and civil government, for those only who have offered Greek and Roman history as primary subjects.

Each of these subjects requires one year's study of not less than five recitation-periods a week. A note-book of not less than fifty written pages, based upon three hundred pages of collateral reading, must be presented at the time of the examination. Equivalents for the subjects outlined above will be accepted, upon due notice, as indicated above under Elementary History.

In place of any of the examinations in Advanced History a candidate may offer any one of the four examinations in History of the College Entrance Examination Board, provided that the subject so offered has not been accepted for the Elementary History requirement.

Mathematics.

A knowledge of the metric system, and ability to perform accurately the ordinary processes of arithmetic, are presumed. Subjects 1 and 2 are required in the Primary Group.

1. Algebra, through quadratic equations in one and two unknown quantities, the progressions, ratio and proportion, and the binomial theorem for positive integral exponents.

One and one-half units.

2. Plane Geometry, including the usual theorems on straight lines, angles, rectilinear figures, circles, and regular polygons; similar triangles and proportion; construction; original exercises in demonstration; numerical problems in mensuration.

One unit.

3. Advanced Algebra: Permutations and combinations; complex numbers and the graphical representation of sums and differences; determinants including the use of minors, and the solution of linear simultaneous equations; solution of numerical equations of higher degree and so much of the theory of equations, with graphical methods, as is necessary for their treatment, including Descartes' rule of signs and Horner's method. Credit in Advanced Algebra is given only on examination.

One-half unit.

4. Solid Geometry, including properties of straight lines and planes, dihedral and polyhedral angles; of projections, of polyhedrons, including prisms, pyramids, and the regular solids; of cylinders, cones, and spheres; of spherical triangles, and the measurement of surfaces and solids. *One-half unit.*

5. Plane Trigonometry, including the definition and relations of the six trigonometrical functions as ratios, proof of important formulæ, theory of logarithms and use of tables, solution of right and oblique plane triangles. *One-half unit.*

In the last three subjects, the school should insist upon the same amount of work and aim at the same standard of scholarship as the college requires in its courses in these subjects.

In place of the examinations in Mathematics a candidate may offer the examinations of the College Entrance Examination Board as follows:

Math. *a* for 1; Math. *c* for 2; Math. *b* for 3; Math. *d* for 4; Math. *f* for 5.

Physics. *One unit.*

The unit in Physics consists of at least 120 hours of sixty minutes each. Time spent in the laboratory shall be counted at one-half its face value. The course of instruction should include: (1) The study of one standard text-book. (2) Individual laboratory work consisting of experiments requiring at least the time of 30 double periods. Each student should perform at least 30 experiments, so distributed as to cover as fully as possible the subject matter of the text-book.

In lieu of the presentation of the laboratory note-book, at the time of the examination, the candidate must present a certificate in the following form:

TEACHER'S CERTIFICATE

..... School

..... 19

I certify that ..... has personally performed and properly recorded in a suitable note-book ..... experiments in the physical laboratory of the ..... School, during the year .....

The entire course has occupied time equal to ..... hours of 60 minutes each, of which .... hours have been given to the laboratory work and ..... hours to lecture and recitation work.

Signed .....

Teacher of Physics.

The teacher may here enter the final grade of ..... per cent.

In place of the above, candidates may present the examination of the College Entrance Examination Board in Physics.

Chemistry. *One unit.*

Preparation for this requirement presupposes a course in general inorganic chemistry (non-metals and metals) of not less than five periods a week for a year. The amount of class work should equal that in An Introduction to the Study of Chemistry, by Ira Remsen, and the experiments should be equivalent to those in Remsen's Laboratory Manual. Time spent in the laboratory shall be counted at one-half its face value. The experiments must be performed by the student, and a certified

laboratory note-book must be presented at the time of the examination.

In place of the above, candidates may present the examination of the College Entrance Examination Board in Chemistry.

Botany and Zoology. *One unit each.*

In Botany and Zoology the examiners give more weight to the character of the work than to time spent; but at least five periods a week for a year must be given to each subject presented, and of this at least a half should consist of laboratory work. Certified copies of laboratory note-books must be presented. The work should be in structural and physiological lines and should include a detailed study of at least ten types.

In place of the examinations in Botany and Zoology, candidates may offer the examinations in Botany and Zoology of the College Entrance Examination Board.

Geology and Geography. *One unit.*

At least five periods a week for a year must have been given to the subject presented. There should have been some laboratory work and excursions. Certified copies of note-books of laboratory work and excursions must be presented.

1. Geology: Norton, Brigham, or book of equivalent grade.
2. Geography: Davis, or book of equivalent grade.

In place of the examination in Geology and Geography, candidates may offer the examination in Geography of the College Entrance Examination Board.

Freehand Drawing. *One unit.*

The examiner requires evidence of ability to sketch from dictation, with reasonable accuracy and with steady, clean lines, any simple geometrical figure or combination of figures; also the ability to sketch from the object or group of objects with reasonable correctness of proportion, geometrical models, simple details of machinery, or common objects such as furniture and household utensils. Such a knowledge of the fundamental principles of perspective is required as shall enable the student

to draw a simple geometric solid without the use of a model. Certified drawings must be submitted for approval.

In place of the above the candidate may offer the examination in drawing of the College Entrance Examination Board.

Mechanical Drawing. *One unit.*

Accuracy and neatness in drawing is of the first importance, and no amount of work will make amends for neglect in these respects. The student must be familiar with the use of ordinary instruments, and able to solve geometrical problems with accuracy and rapidity. He must also be practiced in the drawing of the ellipse, the parabola, and the hyperbola, and have an elementary knowledge of projection, intersection, and development. The suggested course is included in the first one hundred pages of Anthony's Elements of Mechanical Drawing. Certified drawings must be submitted for approval.

Shopwork.

The following units are given for courses satisfactorily pursued in well organized and fully equipped manual training or technical high schools in which the broad foundations of manual and graphic culture are given. The elementary work in the several courses must be thoroughly covered, and no credit will be given for premature engineering work.

Joinery	*One-half unit*
Wood Turning and Elementary Pattern Making	*One-half unit*
Forging	*One-half unit*
Bench and Machine Metal Fitting	*One-half unit*

Details of the work required for preparation in the above courses may be obtained by application to the Department of Mechanic Arts.

Elementary Economics. *One-half unit.*

Preparation for Economics presupposes that the candidate has studied the subject in a systematic course of at least three periods a week for one full year. Credit in Economics will be given only on examination. The examination will be based upon such text-books as Bullock's or Seager's Introduction to

the Study of Economics. A knowledge of civics and, particularly, modern industrial history is of great value in supplementing the study of economic theory.

Music.

Entrance credit in Music is given only on examination.

(*a*) MUSICAL APPRECIATION. *One-half unit.*

The examination will be adapted to the attainment of those who have had one year's systematic training, with three lessons a week, or its equivalent. The candidate is expected to have (1) a general knowledge of the principal musical forms—song, classic dance, fugue, sonata (all movements), symphony—and of their historical development; (2) a general knowledge of the lives and environment of at least ten composers, including Bach, Mozart, Beethoven, Schubert, Chopin, and five of the following: Purcell, Handel, Gluck, Haydn, Cherubini, Weber, Rossini, Glinka, Mendelssohn, Schumann, Wagner, Verdi; (3) familiarity with certain designated works, the list of which may be had on application to the Secretary of Tufts College. In the examination on these works, the candidate will be expected to identify characteristic portions of the works set, when played by the examiner; and to give intelligent information concerning the form and character of the works themselves. The test will not require ability to perform, nor to read from printed music.

(*b*) HARMONY. *One-half unit.*

The examination will be adapted to the proficiency of those who have had one year's systematic training, with three lessons a week, or its equivalent. The candidate should have acquired (1) the ability to harmonize, in four vocal parts, simple melodies of not fewer than eight measures, in soprano or in bass: these melodies will require a knowledge of triads and inversions, of diatonic seventh chords and inversions, in the major and minor modes; and of modulation, transient or complete, to nearly-related keys; (2) analytical knowledge of ninth chords, all non-harmonic tones, and altered chords (including augmented

chords). [Students are encouraged to apply this knowledge in their harmonization.]

It is urgently recommended that systematic ear-training (as to interval, melody, and chord) be a part of the preparation for this examination. Simple exercises in harmonization at the pianoforte are recommended. The student will be expected to have a full knowledge of the rudiments of music, scales, intervals, and staff-notation, including the terms and expression-marks in common use.

(*c*) COUNTERPOINT. *One-half unit.*

The examination will be adapted to the proficiency of those who, having completed a year's study of Harmony, have also studied Counterpoint in a systematic course of three lessons a week through one school year. The candidate should have had training in pianoforte-playing sufficient to enable him to render the Two-Part Inventions of Bach. The year's work should consist principally of written exercises on given or invented themes, as follows: —

Chorals and melodies harmonized, with use of passing and ornamental tones; the several orders of Counterpoint in two, three, and four voices, with and without *cantus firmus;* elementary practice in Double Counterpoint; Imitative Counterpoint in the style of the simpler Two-Part and Three-Part Inventions and Choral Preludes of Bach; general analytical study of contrapuntal compositions of larger scope, including detailed analysis (both as a harmonic scheme and as to contrapuntal treatment) of not less than ten pages from at least four fugues of Bach's Well-Tempered Clavichord.

There should be some practice with the C clef, in reading and in writing. Familiarity with the alto and tenor clefs is especially desirable.

(*d*) PIANOFORTE, OR (*e*) VOICE, OR (*f*) VIOLIN. *One-half unit.*

The examination in each of these subjects will consist of a test in theory, and a test in performance. The former will be conducted in writing, and will be adapted to the proficiency of those who have had one year's systematic training, with one

lesson a week, or its equivalent. The candidate should have acquired:

A knowledge of the rudiments of music, scales, intervals, and staff-notation, including the terms and expression-marks in common use; the ability to analyze the harmony and form of hymn-tunes and simplest pieces for the pianoforte, involving triads and the dominant seventh chord and their inversions, passing tones, and modulation to nearly-related keys; the ability to harmonize, on paper, in four vocal parts, melodic fragments involving the use of triads and the dominant seventh chord and their inversions in major keys.

As a basis of the test in performance, the candidate is to furnish a detailed statement from his teacher, showing the course of instrumental or vocal study pursued.

In place of the above, candidates may offer the corresponding examination of the College Entrance Examination Board: Music *a*, *b*, *c*, and *d* or *e* or *f*.

METHODS OF ADMISSION

Admission to Tufts College may be obtained by examination, by certificate, or by a combination of the two methods. Every candidate for admission must present a testimonial of good character from the Principal under whom he was prepared for college.

Admission by Examination

The College will no longer offer examinations in June, but will depend upon the examinations conducted by the College Entrance Examination Board, which will be held from June 19 to June 24, 1911.

All applications for examination must be addressed to the Secretary of the College Entrance Examination Board, Post Office Sub-Station 84, New York, N. Y., and must be made upon a blank form, to be obtained from the Secretary of the Board upon application.

Applications for examination at points in the United States east of the Mississippi River, also at Minneapolis, St. Louis,

and other points on the Mississippi River, must be received by the Secretary of the Board at least two weeks in advance of the examinations, that is, on or before Monday, June 5, 1911; applications for examination elsewhere in the United States or in Canada must be received at least three weeks in advance of the examinations, that is, on or before Monday, May 29, 1911; and applications for examination outside of the United States and Canada must be received at least five weeks in advance of the examinations, that is, on or before Monday, May 15, 1911.

Applications received later than the dates named will be accepted when it is possible to arrange for the admission of the candidates concerned, but only upon the payment of $5.00 in addition to the usual fee.

The examination fee is $5.00 for all candidates examined at points in the United States and Canada, and $15.00 for all candidates examined outside of the United States and Canada. The fee (which cannot be accepted in advance of the application) should be remitted by postal order, express order, or draft on New York to the order of the College Entrance Examination Board.

A list of the places at which examinations are to be held by the Board in June, 1911, will be published about March 1. Requests that the examinations be held at particular points, to receive proper consideration, should be transmitted to the Secretary of the Board not later than February 1.

For the convenience of those who present the examinations of the College Entrance Examination Board, the following table of equivalents is presented:

TUFTS COLLEGE ENTRANCE SUBJECTS	COLLEGE ENTRANCE EXAMINATION BOARD EQUIVALENT
Elementary English	English *a* and *b*
Elementary German	German *a*
Intermediate German	German *b*
Advanced German	German *bc*
Elementary French	French *a*
Intermediate French	French *b*
Advanced French	French *bc*

Elementary Latin	Old requirements, *a* i and *b* New requirements, 1 and 3
Intermediate Latin	Old requirements, *a* i and ii, *b*, and *c* or *d* New requirements, 1, 2, 3, and 4, or 5
Advanced Latin	Old requirements, *a* i, *b*, *c*, *l*, *p*, and *q* or *dq* New requirements, 1, 3, 4, 5, 6
Elementary Greek	Greek *a* i and ii, *b*, and *g*
Advanced Greek	Greek *a* i, *b*, *c* or *ch*, *f*, and *g*
Elementary History	History, *a*, *b*, *c*, or *d*
Advanced History	History, *a*, *b*, *c*, or *d*
Mathematics	
Algebra	Mathematics *a*
Plane Geometry	Mathematics *c*
Advanced Algebra	Mathematics *b*
Solid Geometry	Mathematics *d*
Trigonometry	Mathematics *f*
Physics	Physics
Chemistry	Chemistry
Botany	Botany
Zoology	Zoology
Geology and Geography	Geography
Freehand Drawing	Drawing
Music, *a*, *b*, *c*, *d*, *e*, *f*	Music, *a*, *b*, *c*, *d*, *e*, *f*

Entrance examinations will be conducted at Tufts College in September as heretofore. These examinations are held on the Thursday, Friday, and Saturday preceding the beginning of the college year, in accordance with the program printed in the calendar, pages 7 and 8.

All candidates for examination in September are required to register at the office of the Registrar before taking their examinations. A fee of $5.00 is charged all candidates for the September examinations. Those who subsequently enter the Department of Arts and Sciences will not be required to pay the registration fee.

At the regular examination those who will be candidates for admission to the Freshman class one year later may present themselves for examination in the subjects of the Primary

Group, and in others in which their teachers may certify that they are adequately prepared.

Admission by Certificate

In place of examinations, certificates will be accepted from preparatory schools which have been approved by the New England College Entrance Certificate Board. All schools in New England which desire the certificate privilege should apply to the Secretary of the Board, Professor Nathaniel F. Davis, 159 Brown Street, Providence, R. I., before April 1st of the year for which the certificate privilege is desired.

Applications for the certificate privilege for schools outside of New England should be made by the Principal on a blank provided for the purpose by the Registrar of Tufts College. Applications should be received before April 1st, in order that the school may be placed upon the approved list for the next academic year.

The academic diploma of the Regents of the State of New York will be accepted in satisfaction of the requirements for admission when such diploma covers the subjects required for entrance.

Credit in the following subjects, which are outside the ordinary preparatory school curriculum, is allowed only upon examination: Advanced Algebra, Economics, and Music.

Certificates showing that candidates have fulfilled the entrance requirements of another college or university in subjects required for admission to Tufts College will ordinarily be accepted for corresponding subjects.

Certificates should be in the hands of the Registrar of the College at least one month before the opening of the college year. Blank forms of certificates will be sent upon request to the Registrar of the College, Tufts College, Massachusetts.

SCHOOL OF LIBERAL ARTS

Faculty

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT

FRANK G. WREN, A.M., DEAN
Walker Professor of Mathematics

PHILIP M. HAYDEN, A.B., SECRETARY
Professor of French

EDWIN C. BOLLES, A.M., PH.D., D.D., LL.D.
Dickson Professor of English and American History

CHARLES E. FAY, A.M., LITT.D.
Wade Professor of Modern Languages

WILLIAM G. TOUSEY, A.M., S.T.D.
Professor of Logic and Ethics

J. STERLING KINGSLEY, SC.D.
Professor of Biology

RICHARD JONES, PH.D.
Professor of English Literature

ALFRED C. LANE. A.M., PH.D.
Pearson Professor of Geology and Mineralogy

COLIN A. SCOTT, A.B., PH.D.
Professor of Psychology and Education

HERBERT E. CUSHMAN, A.M., PH.D.
Professor of Philosophy

LEO R. LEWIS, A.M.
Professor of the History and Theory of Music

FRANK W. DURKEE, A.M.
Professor of Inorganic Chemistry

WILLIAM K. DENISON, A.M.
Professor of the Latin Language and Literature

HARRY G. CHASE, B.S.
Professor of Physics

LAWRENCE B. EVANS, PH.D.
Professor of History

FRED D. LAMBERT, A.M., PH.D.*
Assistant Professor of Biology

*Absent on leave, 1910-11.

HENRY C. METCALF, PH.D.
Jackson Professor of Political Science

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

THOMAS WHITTEMORE, A.B.
Professor of English, and Instructor in the History of Art

LUCIUS M. BRISTOL, A.M., S.T.B.
Instructor in Applied Christianity

WILLIAM R. RANSOM, A.M.
Professor of Mathematics

WILLIAM H. REED, JR., A.M.
Assistant Professor of Modern Languages

CARLETON A. WHEELER, A.M.
Instructor in Modern Languages

ALBERT H. GILMER, A.B.
Instructor in English

ERNEST R. GREENE, A.M.
Instructor in Modern Languages

PHILIP H. COBB, PH.D.
Assistant Professor of Physical and Organic Chemistry

HERBERT M. MORLEY, B.S., M.S.
Instructor in Physics

EDWARD MUELLER, B.S., A.M., PH.D.
Instructor in Chemistry

LEONARD S. BLAKEY, B.S.
Instructor in Economics

JAMES W. CHAPMAN, A.M.
Instructor in Biology

WARD C. PRIEST, A.M.
Instructor in Physics

CHARLES H. DANFORTH, A.M.
Instructor in Biology

HOWARD C. MASON, A.M.
Instructor in History

CLINTON J. MASSECK, A.B.
Instructor in English

HUBERT E. BRAY, A.B.
Walker Special Instructor in Mathematics

OSCAR MARTIN, M.D.
Instructor in Physical Training

Standing Committees

PROMOTIONS: Dean Wren, *Chairman;* Professors Lewis, Durkee, ———, and Denison.

CURRICULUM: Dean Wren, *Chairman;* Professors Fay, Denison, Metcalf, and Durkee.

Requirements for Graduation*

Students may enter upon their work in the courses of liberal arts as candidates for the degree of Bachelor of Arts, or Bachelor of Science. In every case the ground of promotion and of graduation is the intellectual attainment of the individual student, not a fixed requirement of a certain number of years of study. Students determine the general direction of their work by their choice of course. They are thereby brought into personal advisory relations with their respective major instructors, under whose guidance they arrange their programs with reference to their individual needs and aims. All work actually accomplished by the student in regular standing counts toward the attainment of the degree.

SYNOPSIS OF THE REQUIREMENTS FOR GRADUATION†

(1) The requirement for the degree of Bachelor of Arts or Bachelor of Science is the satisfactory completion of subjects aggregating one hundred and twenty-two term hours, including physical training.‡

(2) Students are required to attain for graduation a grade of at least C in seventy-two term hours.§

(3) Upon the satisfactory completion of the aggregate requirement, the student is entitled to receive the Bachelor's degree, but no student will be granted a degree in less than four years of residence, unless he shall have obtained grade B as an average for his entire work.

* For the requirements for B.S., see also the announcement of the Engineering School; for B.D., see the announcement of the Crane Theological School.

† Each department offers a series of subjects for study. The unit indicating the requirements is the *term hour*, which represents a subject pursued one hour a week for one half-year. Thus a subject calling for three hours a week for one term represents a requirement of three term hours; if it calls for three hours a week for one year, or two terms, the requirement in that subject is six term hours.

‡ An acceptable Commencement part counts as an elective in the second half of the Senior year.

§ For the meaning of grade C, see "Grades of Scholarship" under "General Information."

Courses of Instruction

The courses offered to students in the School of Liberal Arts are as follows:

I. A general course, largely elective, leading to the degree or Bachelor of Arts.

II. A General Science Course, and a Chemistry Course, largely prescribed, leading to the degree of Bachelor of Science.

III. Eight courses arranged for students proposing to prepare for advanced study in certain lines, or to enter upon certain occupations. These courses lead to the degree of Bachelor of Arts for students who present an advanced ancient language for admission, and who choose their electives so as to fulfil the requirements for that degree; others satisfactorily completing any one of these courses receive the degree of Bachelor of Science.

I. GENERAL COURSE LEADING TO THE DEGREE OF BACHELOR OF ARTS

The plan of study aims to furnish, in its prescribed subjects, the essentials of a liberal education, and at the same time a large opportunity for election.

The following subjects are prescribed: —

	Term Hours
Languages (Latin, Greek, French, German: each student to take *three*)	18
English	6
Mathematics	6
Physical Science (Physics, Chemistry, Biology: each student to take *one, or two*)	12
Mental and Moral Science (of the three departments, Philosophy, Political Science, and History and Public Law, each student must take work in *at least two*)	12
Physical Training	2
A total of	56

The requirements are by groups, not by special subjects, and in each group except English and Physical Training some choice is allowed the student.

A normal Freshman program includes English, Mathematics, an ancient language, a second foreign language, and a physical science, together with Physical Training. All Freshman programs are subject to the approval of the Committee on Promotions.

At the end of the first year the student is required to choose a major department in which he must complete, before graduation, work amounting to eighteen term hours. He may offer work already done in that subject in some one of the prescribed groups as a part of the eighteen hours which he is required to give to his major department, but no subject indicated in the catalogue as elementary can be counted in such work.

The student shall further complete eighteen term hours in subjects designated as collateral with his major subject; that is, subjects tending to strengthen and to assist his work in his major.

The remaining term hours of the required aggregate are to be made up by the election of the student from the various subjects offered, limited only by special restrictions applied to certain subjects. The number of the remaining term hours is thirty, unless, as occasionally happens, the same work counts both as prescribed and as major or collateral work. In such case the number of elective hours is correspondingly increased.

II. COURSES IN GENERAL SCIENCE AND CHEMISTRY

General Science

The course in General Science is designed to prepare students for positions as teachers of Science in the secondary schools, or for graduate work in Physics, Chemistry, or Biology.

FRESHMAN YEAR

First Term		Second Term	
English 1	3	English 2	3
Mathematics 3	3	Mathematics 1	3
German or French	3	German or French	3
Physics 1	3	Physics 1	3
Chemistry 1	3	Chemistry 1	3

SOPHOMORE YEAR

First Term		Second Term	
Biology 2 or 3	3	Biology 2 or 3	3
Chemistry 35-2	2	Chemistry 35-3	2
Physical Laboratory	3	Physics 31-3	3
Mathematics 4	3	Mathematics 3	3
French or German	3	French or German	3

JUNIOR YEAR

First Term		Second Term	
Biology 3 or 2	3	Biology 3 or 2	3
Chemistry 4	3	Chemistry 4	3
Geology 2	3	Physics 2	3
Political Science 1 or History 1	3	Geology 2	3
		Political Science 1 or History 1	3
Electives		*Electives*	
Physics		Physics	
Chemistry		Chemistry	
Biology		Biology	
Mathematics		Mathematics	
Modern Language		Modern Language	

SENIOR YEAR

First Term		Second Term	
Biology 7	3	Biology 7	3
Chemistry 11	3	Chemistry 11	3
History 1 or Political Science 1	3	History 1 or Political Science 1	3
Drawing 21-1	5		
Electives		*Electives*	
Physics		Physics	
Chemistry		Chemistry	
Biology		Biology	
Steam Engine		Steam Engine	
Mechanic Arts		Mechanic Arts	
History or Political Science		History or Political Science	
Modern Language		Modern Language	

CHEMISTRY

Students who wish to specialize in Chemistry are advised to take the B.S. course in Chemistry. The subjects have been selected and arranged to prepare students for positions in metallurgical laboratories, as chemists with manufacturers or in analytical laboratories, or as assistant chemists for immediate service in the various departments of the United States government. It may also be followed by those who wish to teach or to do graduate work in Chemistry.

FRESHMAN YEAR

First Term		Second Term	
English 1	3	English 2	
Mathematics 3	3	Mathematics 1 or 2	3
Physics 1	3	Physics 1	3
German	3	German	3
Chemistry 1	3	Chemistry 1	3

SOPHOMORE YEAR

First Term		Second Term	
German	3	German	3
Chemistry 35-2	2	Chemistry 35-3	2
Chemistry 4	3	Chemistry 4	3
Physical Laboratory	3	Physics 2	3

Electives		*Electives*	
Mathematics		Mathematics	
English		English	
Drawing			

JUNIOR YEAR

First Term		Second Term	
Chemistry 5	3	Chemistry 5	3
Chemistry 9	1	Chemistry 7	2
Chemistry 35-10	4	Chemistry 35-10	4
Political Science 1	3	Political Science 1	3
Mineralogy 1	3		
Electives		*Electives*	
German		German	
English		English	
Mathematics		Mathematics	
History 1		History 1	
Electrical Laboratory		Electrical Laboratory	
		Crystallography	

SENIOR YEAR

First Term		Second Term	
Chemistry 11	3	Chemistry 11	3
Chemistry 17	3	Chemistry 17	3
Thesis	3	Thesis	3
Geology 2	3	Geology 2	3
		Chemistry 8	2
Electives		*Electives*	
Biology		Biology	
Chemistry 12		Chemistry 12	
Political Science		Political Science	
Dynamo-Electric Machinery			

III. SPECIALIZED COURSES LEADING TO THE DEGREE OF BACHELOR OF ARTS OR BACHELOR OF SCIENCE

The following courses have been arranged for students who desire to begin preparation for a definite vocation. They are designed to give at the same time as much of the general training which every educated man should have as is consistent with their special purpose, and are intended to be followed by more definitely specialized training in a graduate school or in practical experience. Those who have presented an advanced ancient language for admission and choose their electives so as to fulfil the requirements of the A.B. degree, will receive that degree. Others satisfactorily completing the subjects indicated in one of these courses will receive the degree of B.S. The studies of the Freshman year are alike for all courses, with one exception, noted below, so that a definite choice need not usually be made before the end of the first year.

FRESHMAN YEAR

[Alike for all the following courses]

First Term		Second Term	
English 1	3	English 2	3
Mathematics 3	3	Mathematics 1 or 2	3
Natural Science	3	Natural Science	3
Two Foreign Languages, ancient or modern	6	Two Foreign Languages, ancient or modern	6

Note: Students intending to enter the Medical Preparatory or Forestry Preparatory Course should take Physics 1 as the Natural Science in this year.

BUSINESS

The need of systematic training of students contemplating a business career arises from the differentiation, specialization, and increasing complexity of modern business relations. This course is in no sense intended as a substitute for experience; but it should impart organized knowledge, broaden the outlook, and train the student to analyze and to appreciate new situations as they arise.

SOPHOMORE YEAR

First Term		Second Term	
Foreign Lang., ancient or modern	3	Foreign Lang., ancient or modern	3
Natural Science	3	Natural Science	3
History 1	3	History 1	3
Political Science 1	3	Political Science 1	3
Elective	3	Elective	3

JUNIOR YEAR

First Term		Second Term	
Political Science 2 or 22	3	Political Science 3	3
Political Science 6	3	Political Science 16	3
Philosophy 3	3	Philosophy 4	3
Law 1 or 5	3	Elective	6
Elective	3		

SENIOR YEAR

First Term		Second Term	
Political Science 12	3	Political Science 12	3
Education 5	3	Education 5	3
Law 5 or 1	3	Elective	9
Elective	6		

DIPLOMATIC AND CONSULAR SERVICE

For all except the highest posts in the diplomatic and consular service, appointees are now required to prove their fitness by examination. The following course, which emphasizes the study of Language, History, and Public Law, is designed to meet the requirements prescribed by the Department of State.

SOPHOMORE YEAR

First Term		Second Term	
Foreign Lang., ancient or modern	3	Foreign Lang., ancient or modern	3
Natural Science	3	Natural Science	3
History 1	3	History 1	3
Political Science 1	3	Political Science 1	3
Elective	3	Elective	3

JUNIOR YEAR

First Term		Second Term	
Law 1 (or alternate)	3	History 5 (or alternate)	3
Philosophy 3 or Political Science 22	3	Law 2 (or alternate)	3
French 3B or German 3B	3	French 3B or German 3B	3
Elective	6	Elective	6

SENIOR YEAR

First Term		Second Term	
History 6	3	History 7	3
Political Science or Philosophy 3	3	Law 7 (or alternate)	3
Law 5 (or alternate)	3	History 15	3
History 15	3	Elective	6
Elective	3		

Forestry Preparatory

The Forestry Preparatory Course is intended to fit students to enter the best Forestry schools, and includes the subjects which are necessary to meet the requirements of those institutions. Within the last few years Forestry has become one of the most important professions, and the demand for trained foresters is greater than the supply.

SOPHOMORE YEAR

First Term		Second Term	
Foreign Lang., ancient or modern	3	Foreign Lang., ancient or modern	3
Chemistry 1	3	Chemistry 1	3
Physical Laboratory	3	Physics 2	3
Biology 2 or 3	3	Biology 2 or 3	3
History	3	History	3

JUNIOR YEAR

First Term		Second Term	
Chemistry 2	2	Chemistry 3	2
Biology 3 or 2	3	Biology 3 or 2	3
Drawing 21-1	5	Surveying 41-1	2
Surveying 41-1	1	Political Science 1	3
Political Science 1	3	Elective	6

SENIOR YEAR

First Term		Second Term	
Geology 2	3	Geology 2	3
Biology 7	3	Biology 7	3
Elective	9	Hydraulics 41-43	2
		Highways 41-21	2
		Dynamo-Electric Machinery 61-3	3
		Elective	3

Journalism

This course, designed for students who intend to adopt Journalism as a profession, is not intended as a substitute for

experience. It aims to give the general education which is essential for work in this profession, placing emphasis on subjects which give an understanding of the life of to-day, and those which develop the power of accurate and fluent expression.

SOPHOMORE YEAR

First Term		Second Term	
Foreign Lang., ancient or modern	3	Foreign Lang., ancient or modern	3
Advanced English Composition	3	English 14, 18, or 21	3
Natural Science	3	Natural Science	3
History 1	3	History 1	3
Political Science 1	3	Political Science 1	3

JUNIOR YEAR

First Term		Second Term	
History 3	3	History 3	3
English 11 or 12	3	English 11 or 12	3
Philosophy 3	3	Political Science 16	3
History 4 (or alternate)	3	History 5 (or alternate)	3
Elective	3	Elective	3

SENIOR YEAR

First Term		Second Term	
Philosophy 6	3	Philosophy 7	3
Law (1 or 5)	3	Fine Arts	3
Political Science 6	3	Philosophy 55	3
Fine Arts	3	Elective	6
Philosophy 55	3		

LAW PREPARATORY

The following course, which is arranged especially for students who are preparing to enter a law school, emphasizes the study of History, English, Economics, and Public Law. Among the more technical courses in Public Law, students may elect subjects which will enable them to test their fitness for the legal profession.

SOPHOMORE YEAR

First Term		Second Term	
Foreign Lang., ancient or modern	3	Foreign Lang., ancient or modern	3
Natural Science	3	Natural Science	3
History 1	3	History 1	3
Philosophy 1	3	Philosophy 2	3
Elective (English or Pol. Science)	3	Elective (English or Pol. Science)	3

JUNIOR YEAR

First Term		Second Term	
History 2 or 6	3	History 2 or 7	3
Law 1 (or alternate)	3	Philosophy 4	3
Philosophy 3	3	Elective	9
Elective	6		

SENIOR YEAR

First Term		Second Term	
History 6 or 2	3	History 7 or 2	3
Law 5 (or alternate)	3	History 15	3
History 15	3	Elective	9
Elective	6		

MEDICAL PREPARATORY

The Medical Preparatory Course is intended to fit students for any medical school in the United States. The studies included are all of immediate importance in the professional training, and those of the fourth year, taken in the Tufts Medical School, complete the first year of the distinctively medical course. In this way it is possible to obtain the bachelor's and the doctor's degree in seven years.

SOPHOMORE YEAR

FIRST TERM		SECOND TERM	
Foreign Lang., ancient or modern	3	Foreign Lang., ancient or modern	3
Physical Laboratory	3	Physics 2	3
Chemistry 1	3	Chemistry 1	3
Biology 2 or 3	3	Biology 2 or 3	3
History	3	History	3

JUNIOR YEAR

FIRST TERM		SECOND TERM	
Chemistry 2	2	Chemistry 3	2
Biology 3 or 2	3	Biology 3 or 2	3
Chemistry 10	4	Chemistry 10	4
Education 5	3	Education 5	3
Elective	3	Elective	3

SENIOR YEAR

Corresponds to the first year of the Medical Course
(In Tufts Medical School, Boston)

ORGANIZED PHILANTHROPY

The following course in Organized Philanthropy has been arranged to fit the student for professional and volunteer social work, or to enter the professional schools which have lately been established in this field.

SOPHOMORE YEAR

FIRST TERM		SECOND TERM	
German	3	German	3
Chemistry or Biology	3	Chemistry or Biology	3
History 1	3	History 1	3
Political Science 1	3	Political Science 1	3
Philosophy 1	3	Philosophy 2	3

JUNIOR YEAR

FIRST TERM		SECOND TERM	
Political Science 2 or 22	3	Political Science 3	3
Political Science 6	3	Political Science 16	3
Political Science 12	3	Political Science 12	3
Law 1 or 5	3	Law 2 or 7	3
Elective	3	Elective	3

SENIOR YEAR

First Term		Second Term	
Law 5 or 1	3	Law 7 or 2	3
Philosophy 6	3	Philosophy 7	3
Political Science 4	3	Political Science 5	3
Political Science 9	3	Political Science 9	3
Elective	3	Elective	3

TEACHING

This course is designed to give a broad training, with a reasonable opportunity for specialization, and to include in particular the subjects now required of teachers in many of the larger cities. Students intending to teach Language are advised to take Latin in the Freshman year, on account of its fundamental value in the study of other languages.

The attention of students intending to teach Science is called to the course in General Science.

SOPHOMORE YEAR

First Term		Second Term	
Philosophy 1	3	Philosophy 2	3
History 1	3	History 1	3
Natural Science	3	Natural Science	3
Foreign Lang., ancient or modern	3	Foreign Lang., ancient or modern	3
Major Work	3	Major Work	3

JUNIOR YEAR

First Term		Second Term	
Education 5	3	Education 5	3
Music 9 or 1	3	Music 10 or 21	3
Major and Elective Work	9	Major and Elective Work	9

SENIOR YEAR

First Term		Second Term	
Education 1	3	Education 2	3
Fine Arts	3	Fine Arts	3
Major and Elective Work	9	Major and Elective Work	9

Departments of Instruction

MAJOR DEPARTMENTS

Any of the following may be chosen as major departments

ENGLISH	POLITICAL SCIENCE
GERMAN	MATHEMATICS
FRENCH	PHYSICS
LATIN	CHEMISTRY
GREEK	BIOLOGY
PHILOSOPHY	ENGINEERING
HISTORY AND PUBLIC LAW	

In the subjoined statement of the subjects offered in the different departments, the name of the major instructor is that given at the head of each department that offers major work. In other cases the name is given of the instructor in general charge of the department. When two or more names appear, major students will be guided by the usage of the department. Names of instructors in charge of each subject are appended to the brief statement of the subject itself.

Subjects that continue through only one half-year are indicated by letters in parenthesis following the proposed hour: thus (F) means "first half-year," (S) means "second half-year." Subjects not so indicated extend through both terms. The credit in term hours for each half-year is equivalent to the number of program hours a week assigned to the subject, unless otherwise indicated.

The hour for the Tufts division is indicated by the letter T; for the Jackson division by J. Initials are used for the days of the week, thus: *MWF*, Monday, Wednesday, and Friday; *TTS*, Tuesday, Thursday, and Saturday. The numeral following these letters indicates the program-hour, not the time of day. The working day is divided into seven periods, beginning

respectively at 8.00, 8.50, 9.50, 11.10, 12.10, 2.10, and 3.10, and the hours are numbered in that order. Thus, *MWF 2* means 8.50 on the respective days; *TTS 4* means 11.10, etc. Only laboratory work is assigned to *MWF 1* and *TTS 1* (8.00). If both divisions are at the same hour, or if there is but one division, the statement reads T J *MWF 4*. If only one period and one instructor are indicated, the class work is in common. The order of instructors' names does not indicate which division they will conduct; in many cases, instructors will alternate.

Subjects enclosed in brackets will not be given during the current year. In many cases alternates are indicated, which fill their places in the program for this year. If less than four qualified students apply for an announced course, the instructor is permitted to cancel the announcement unless the course is a part of the required work for any student applying. Subjects marked with an asterisk (*) will not be counted for honors. Subjects marked with a double asterisk (**) will be counted for honors only when special conditions are complied with.

No two subjects assigned to the same hour can be taken simultaneously by any student.

12 ENGLISH

PROFESSOR JONES AND PROFESSOR WHITTEMORE

The work of the department of English includes composition and the study of literature. Subjects 1, 2, 4, and 23 give practice in one or another form of composition as the result immediately held in view, but written English is required also in many of the classes aiming primarily at literary study. See also subject 7. Subjects 1 and 2 are prescribed for all students in the School of Liberal Arts. Major students in English are required to take English 11, preferably in the earlier years of their course. Other subjects offer opportunity for practice in advanced composition, and for the study of eminent authors, of leading critical essays, of the development of English drama and fiction. English 10, 11, or 12 may be counted for honors, provided only one of these subjects is so counted.

SUBJECTS

*1. The Four Forms of Discourse. Lectures, text-books, themes, conferences. T *TTS 5*; J *TTS 4*. (F)
MR. GILMER, PROFESSOR DAVIES, AND MR. MASSECK

*2. A Study of Expression. Lectures, themes, conferences. T *TTS 5*; J *Hours to be arranged*. (S)
PROFESSOR WHITTEMORE, MR. GILMER, AND MR. MASSECK

[4. Advanced Composition. Lectures, themes, conferences. *Three hours, to be arranged*. (S) —— ——]

English 4 is open to those who have obtained at least Grade C in English 1 and English 2.

7. English Versification. Study of the nature and the forms of poetry. Composition. T J *TTS 5*. (S) MR. MASSECK

[**10. The English Bible. T J *MWF 5*. PROFESSOR WHITTEMORE]

English 10 may be expected in 1911-12.

**11. General View of English Literature. The study of representative masterpieces. Lectures, text-books, required reading, papers. T J *MWF 2*.
MR. GILMER

[**12. American Literature. Lectures, required reading, text-book, essays. *Three hours, to be arranged*. PROFESSOR JONES]

14. Tennyson and Browning. Lectures, reading, brief critical essays. T J *TTS 3*. (F) PROFESSOR JONES

14A. Tennyson and Browning. A continuation of English 14. T J *TTS 3*. (S) PROFESSOR JONES

Beginning in 1911-12 English 14 and 14A will be made one full year subject known as English 34.

[24. Poetry of the Nineteenth Century, except Tennyson and Browning. J *TTS* 3 (S) PROFESSOR JONES AND MR. GILMER]

[16. Milton and his Time. Lectures, readings, brief critical essays. T J *MWF 7*. PROFESSOR WHITTEMORE]

17. Shakespeare. Minute study of a few plays, lectures, quizzes. T *MWF 3*; J *Hours to be arranged*. (F) PROFESSOR WHITTEMORE

18. Shakespeare. Reading of selected plays, lectures, brief critical essays. T J *MWF 3*. (S) PROFESSOR WHITTEMORE

[19. The age of Chaucer. Study of forms and pronunciation, reading of selections from Chaucer and his contemporaries. *Three hours, to be arranged*. —— ——]

[21. The Principles of Criticism. Plato, Aristotle, Longinus, Quintilian, Burke, Lessing, Coleridge, Pater. *Three hours, to be arranged*. (S)
PROFESSOR WHITTEMORE]

English 21 may be expected in 1911-12.

respectively at 8.00, 8.50, 9.50, 11.10, 12.10, 2.10, and 3.10, and the hours are numbered in that order. Thus, *MWF 2* means 8.50 on the respective days; *TTS 4* means 11.10, etc. Only laboratory work is assigned to *MWF 1* and *TTS 1* (8.00). If both divisions are at the same hour, or if there is but one division, the statement reads T J *MWF 4*. If only one period and one instructor are indicated, the class work is in common. The order of instructors' names does not indicate which division they will conduct; in many cases, instructors will alternate.

Subjects enclosed in brackets will not be given during the current year. In many cases alternates are indicated, which fill their places in the program for this year. If less than four qualified students apply for an announced course, the instructor is permitted to cancel the announcement unless the course is a part of the required work for any student applying. Subjects marked with an asterisk (*) will not be counted for honors. Subjects marked with a double asterisk (**) will be counted for honors only when special conditions are complied with.

No two subjects assigned to the same hour can be taken simultaneously by any student.

12 ENGLISH

PROFESSOR JONES AND PROFESSOR WHITTEMORE

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*1. The Four Forms of Discourse. Lectures, text-books, themes, conferences. T *TTS 5*; J *TTS 4*. (F)
MR. GILMER, PROFESSOR DAVIES, AND MR. MASSECK

*2. A Study of Expression. Lectures, themes, conferences. T *TTS 5*; J *Hours to be arranged*. (S)
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MR. GILMER

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14. Tennyson and Browning. Lectures, reading, brief critical essays. T J *TTS 3*. (F) PROFESSOR JONES

14A. Tennyson and Browning. A continuation of English 14. T J *TTS 3*. (S) PROFESSOR JONES

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[24. Poetry of the Nineteenth Century, except Tennyson and Browning. J *TTS* 3 (S) PROFESSOR JONES AND MR. GILMER]

[16. Milton and his Time. Lectures, readings, brief critical essays. T J *MWF 7*. PROFESSOR WHITTEMORE]

17. Shakespeare. Minute study of a few plays, lectures, quizzes. T *MWF 3*; J *Hours to be arranged*. (F) PROFESSOR WHITTEMORE

18. Shakespeare. Reading of selected plays, lectures, brief critical essays. T J *MWF 3*. (S) PROFESSOR WHITTEMORE

[19. The age of Chaucer. Study of forms and pronunciation, reading of selections from Chaucer and his contemporaries. *Three hours, to be arranged*. —— ——]

[21. The Principles of Criticism. Plato, Aristotle, Longinus, Quintilian, Burke, Lessing, Coleridge, Pater. *Three hours, to be arranged*. (S)
PROFESSOR WHITTEMORE]

English 21 may be expected in 1911-12.

23. The Short Story. Examples, and composition. *Three hours, to be arranged.* (F) PROFESSOR WHITTEMORE

[25. Development of the Drama. *Three hours, to be arranged.* MR. GILMER]

[26. Development of the English Novel, in the eighteenth and nineteenth centuries. *Three hours, to be arranged.* —— ——]

English 26 may be expected in 1911-12.

28. Seminar in Tennyson. *Hours and credit to be arranged.* PROFESSOR JONES.

English 28 is open only to advanced students of English.

36. Thomas Carlyle. *Three hours, to be arranged.* (S) PROFESSOR JONES.

18 ORATORY

PROFESSOR WHITTEMORE AND MR. GILMER

It is intended that the study of oratory shall benefit the student, whether or not he looks to public speaking as a part of his profession. Oratory 1 aims at securing intelligent, natural, and forcible speech. The principles that underlie good public speaking are pointed out, and applied in individual practice. Oratory 2 is not organically connected with Oratory 1, but offers practice in argumentation and debate to Sophomores, Juniors, and Seniors. Each subject counts as three term hours.

SUBJECTS

1. The Principles of Oratory. Correct breathing and tone production; placing the voice; enunciation and pronunciation; attitude and gesture. Conferences. *Three hours, to be arranged.* (S) PROFESSOR WHITTEMORE AND MR. MASSECK

2. Argumentation and Debate. Text-book, papers, impromptu and prepared debate. Individual criticism. *Three hours, to be arranged.* (F) MR. GILMER

22 GERMAN

PROFESSOR FAY

The aim of the department is twofold, according as the student has entered with the elementary or a more advanced requirement. In the former case it is to lead him in the briefest possible time to such a mastery of the language as will enable him to use it as a source of information and medium of literary culture; where this preliminary work has already been done, to afford

this literary culture itself, together with such historical and linguistic knowledge as may properly accompany advanced work in a literary department. Hence, in the elementary subjects, facility and accuracy of translation are sought by means of copious reading and careful grammatical drill; later the classic masterpieces are read for their own sake, together with such historical material as will throw light upon the epoch in which they were written or with which they deal; in the advanced work the systematic study of the history of the literature is undertaken, and opportunity is afforded for acquiring a knowledge of the earlier literary forms.

Six consecutive subjects are offered. While it is not impossible to take them all within the four college years, the scheme is based upon the supposition that the earlier subjects will have been taken in the preparatory school.

SUBJECTS

*1. Elementary German. The essentials of grammar; a German reader; reading of modern prose; dictation and composition. T *MWF4*; J *TTS2*. ASSISTANT PROFESSOR REED AND MR. WHEELER

German 1 is the equivalent of the entrance requirement in Elementary German, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Review of grammatical principles, especially with reference to syntax. Reading of works by modern authors, lyrics and ballads. Dictation and composition. T J *MWF3*.

ASSISTANT PROFESSOR REED AND MR. WHEELER

German 2, when taken by entering students, presupposes two years' study of the language in the preparatory school. It is possible for a student who has done with distinction the work of German 1, and who shall do a prescribed amount of outside reading, to omit this subject and enter German 3.

**3. First half-year: the rapid reading of modern prose in contemporary authors. Second half-year: introduction to the classic authors: Lessing, Minna von Barnhelm; Schiller, Die Jungfrau von Orleans; Goethe, Hermann und Dorothea. T *MWF4*; J *TTS2*.

PROFESSOR FAY AND ASSISTANT PROFESSOR REED

For entering students German 3 presupposes three years of preparatory study. Either half-year may be counted as a half-subject.

**3B. German Composition, written and oral. Translation from English into German; paraphrase of a German text. T J *TTS 5*.
ASSISTANT PROFESSOR REED

German 3B is offered to students who are taking or have previously taken German 3 or its equivalent.

4. Schiller and Goethe. Maria Stuart, Wallenstein, and Ballads of Schiller; Egmont, and selections from prose works of Goethe. Collateral reading. Dictation. T J *MWF 5*. ASSISTANT PROFESSOR REED

German 4 is open to entering students who have had four years of preparatory study, or who have passed the entrance examination in Advanced German. Juniors and Seniors whose major department is German may be permitted to take 4 and 5 in the same year.

5. Advanced reading in Lessing and Goethe. Nathan der Weise, Emilia Galotti, Laokoon; Tasso, Iphigenie, Faust, Parts I and II, with collateral reading. *Three hours, to be arranged.* PROFESSOR FAY

6. History of German Literature, with illustrative works for leading epochs. Middle High German: Bachmann, Mittelhochdeutsches Lesebuch. *Three hours, to be arranged.* PROFESSOR FAY

32 FRENCH

PROFESSOR FAY AND PROFESSOR LEWIS

The plan and scope of the department are, in general, the same as those of the department of German, to the statement of which the student is referred. Six consecutive subjects are offered.

SUBJECTS

*1. Elementary French. The essentials of grammar, with composition. Grandgent's Grammar; a French reader; reading of short works of modern authors in prose and verse. T *MWF 4*; J *If given, hours to be arranged.*
MR. GREENE AND MR. WHEELER

French 1 is the equivalent of the entrance requirement in Elementary French, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Review of grammatical principles, especially with reference to syntax; exercise in composition; vocabulary practice; reading of modern fiction and drama, such as Merimée's Colomba and Sandeau's Mademoiselle de la Seiglière. T *MWF 3*; J *TTS 3*.
MR. GREENE AND MR. WHEELER

French 2, when taken by entering students, presupposes two years' study of the language.

**3. Reading of modern authors (Thiers, Taine, de Vigny); introduction to seventeenth-century classics (Corneille, Racine, Molière). Review of grammatical principles, with advanced vocabulary practice. T J *MWF* 6.
PROFESSOR LEWIS AND MR. GREENE

For entering students French 3 presupposes three years of preparatory study. Either half-year may count as a half-subject.

**3B. French Composition. Plœtz, Nouvelle Grammaire Française and Wüllenweber, Uebungsbuch zum Uebersetzen in's Französische. T J *TTS* 4. PROFESSOR FAY

French 3B is offered to students who have satisfactorily completed French 2 or its equivalent. It is essential that at least one course in German should have been taken.

4. Literature and Manners of the Seventeenth Century. Crane's Société française au XVII^e Siècle; Molière, Le Misanthrope, Les Précieuses Ridicules, Les Femmes Savantes; Boileau, Les Héros de Roman; Madame de Sévigné; La Fontaine, Fables (selected); Warren's French Prose of the XVIIth Century; collateral reading touching the political history of the period, and selections from modern critics. T J *TTS* 3.
PROFESSOR FAY

French 4 is open to entering students who have had four years of preparatory study of the language, or who have passed the entrance examination in Advanced French. Juniors and Seniors whose major department is French may be permitted to take 4 and 5 in the same year.

5. Literature of the Eighteenth and Nineteenth Centuries. The drama, poetry, the novel, the philosophical essay, and criticism. *Three hours, to be arranged.* PROFESSOR LEWIS

Either half-year may count as a half-subject.

[6. A systematic study of French literature from the earliest times to the middle of the nineteenth century. The manual of Petit de Julleville, Lanson and others, will be read, in the whole or in part, together with illustrative texts for the several epochs, from which some period will be chosen for more detailed study. T J *MWF* 7. PROFESSOR FAY]

42 ITALIAN

PROFESSOR FAY

The work offered in Italian is open to those only who have had two years of college study in French, or its equivalent. With such previous training, the student is able to acquire with rapidity a reading knowledge of the language, and thus to become acquainted within the year with characteristics of contemporary and classic literature. This subject is presented in alternate years.

SUBJECT

1. Grandgent's Grammar and Composition; Bowen's Reader; Maffei, Merope; Dante, Divina Commedia (Scartazzini's edition). T J *MWF* 7.
PROFESSOR FAY

52 LATIN

PROFESSOR DENISON

The aim of the department of Latin is to lead students to a thorough appreciation of a language and people that have had profound influence on modern life and literature. A wide range of reading is offered, to give opportunity for acquaintance with every important division of Latin literature. Considerable time is devoted to reading at sight. The attention of students is directed constantly to the history, archæology, art, public and private life, and religion of the Roman people, as well as to the formation and structure of their language and its relation to other languages. Due emphasis is laid on the connection between ancient and modern life and thought. The various reading courses are supplemented with lectures on appropriate topics, and are illustrated from time to time with the stereopticon. Latin 1, 2, either 3 or 4, and two composition courses are offered every year, and a number of other subjects, such as Latin 8, 9, and 10, are given, with due announcement, at regular but longer intervals. Courses 3, 4, and all designated by numbers above 7, as well as all subjects in Classical Archæology, are suitable for graduate students. The authors and works named below may be changed, but are fairly indicative of the character of the work in the several subjects.

SUBJECTS

*1. Cicero, De Senectute, or selected letters; Vergil, Eclogues; Horace, Odes and Epodes; Livy, two books; reading at sight; lectures on suitable topics. T *MWF* 7; J *MWF* 2.
PROFESSOR DENISON AND PROFESSOR DAVIES

Latin 1 is introductory to all later subjects.

2. Pliny, selected letters; Petronius, Cena Trimalchionis; Terence, Phormio; Tacitus, Germania or Agricola; reading at sight; lectures on suitable topics. The authors, with the exception of Terence, belong to the Silver Age. The student is thus carried into a new epoch of Latin literature. T J *TTS* 4. PROFESSOR DENISON

Latin 2 is open to students who have completed Latin 1.

3. Juvenal, principal Satires; Martial, selected Epigrams; Cicero-Tusculan Disputations; reading at sight. Juvenal and Martial will be studied with special reference to the information they afford concerning the history and life of the early empire. *Three hours, to be arranged.*

PROFESSOR DENISON

[4. Horace, Satires and Epistles; Plautus, one or two plays; Cicero, selected letters; reading at sight. *Three hours, to be arranged.*

PROFESSOR DENISON]

Subjects 3 and 4 will be given in alternate years, and are designed for those who have completed Latin 2, or its equivalent. They may, by special arrangement with the instructor, be taken as half-subjects in either half-year.

*5. Latin Composition. This course may accompany Latin 1 or be taken later in connection with other subjects offered by the department. T J *Tu. 6.* PROFESSOR DENISON

6. Latin Composition. Latin 6 is open only to students who have completed Latin 5. In it particular attention is paid to idiom and style. By reason of the variation of the work from year to year, the subject may be taken a second time with due credit. *One hour, to be arranged.*

PROFESSOR DENISON

[8. Terence, Phormio; Cicero, De Officiis, and Dream of Scipio. *Three hours, to be arranged.* (S) PROFESSOR DENISON]

9. The Elegiac Poets, Tibullus, Propertius, and Ovid. *Three hours, to be arranged.* (S) PROFESSOR DENISON

[10. Lucretius, selections; Vergil, Georgics; Seneca, Medea. *Three hours, to be arranged.* (S) PROFESSOR DENISON]

Latin 8, 9, and 10 are half-subjects, and are given, one each year, in regular rotation, if elected by a reasonable number of students. They are open to students who have completed Latin 1, but are intended to be supplementary to, not a substitute for, 2, 3, and 4. Those who wish to widen the range of their Latin reading will find these subjects suited to that end.

NOTE: — The attention of Greek and Latin students is called to related subjects listed under Classical Archæology.

62 GREEK

PROFESSOR WADE

The aim of the department is to treat the Greek language not merely as a disciplinary instrument, but as a factor in the broadest and most liberal culture. Throughout the course the practice of reading at sight is encouraged, and especial effort is made to

SUBJECT

1. Grandgent's Grammar and Composition; Bowen's Reader; Maffei, Merope; Dante, Divina Commedia (Scartazzini's edition). T J *MWF* 7.
PROFESSOR FAY

52 LATIN

PROFESSOR DENISON

The aim of the department of Latin is to lead students to a thorough appreciation of a language and people that have had profound influence on modern life and literature. A wide range of reading is offered, to give opportunity for acquaintance with every important division of Latin literature. Considerable time is devoted to reading at sight. The attention of students is directed constantly to the history, archæology, art, public and private life, and religion of the Roman people, as well as to the formation and structure of their language and its relation to other languages. Due emphasis is laid on the connection between ancient and modern life and thought. The various reading courses are supplemented with lectures on appropriate topics, and are illustrated from time to time with the stereopticon. Latin 1, 2, either 3 or 4, and two composition courses are offered every year, and a number of other subjects, such as Latin 8, 9, and 10, are given, with due announcement, at regular but longer intervals. Courses 3, 4, and all designated by numbers above 7, as well as all subjects in Classical Archæology, are suitable for graduate students. The authors and works named below may be changed, but are fairly indicative of the character of the work in the several subjects.

SUBJECTS

*1. Cicero, De Senectute, or selected letters; Vergil, Eclogues; Horace, Odes and Epodes; Livy, two books; reading at sight; lectures on suitable topics. T *MWF* 7; J *MWF* 2.
PROFESSOR DENISON AND PROFESSOR DAVIES

Latin 1 is introductory to all later subjects.

2. Pliny, selected letters; Petronius, Cena Trimalchionis; Terence, Phormio; Tacitus, Germania or Agricola; reading at sight; lectures on suitable topics. The authors, with the exception of Terence, belong to the Silver Age. The student is thus carried into a new epoch of Latin literature. T J *TTS* 4. PROFESSOR DENISON

Latin 2 is open to students who have completed Latin 1.

3. Juvenal, principal Satires; Martial, selected Epigrams; Cicero-Tusculan Disputations; reading at sight. Juvenal and Martial will be studied with special reference to the information they afford concerning the history and life of the early empire. *Three hours, to be arranged.*

PROFESSOR DENISON

[4. Horace, Satires and Epistles; Plautus, one or two plays; Cicero, selected letters; reading at sight. *Three hours, to be arranged.*

PROFESSOR DENISON]

Subjects 3 and 4 will be given in alternate years, and are designed for those who have completed Latin 2, or its equivalent. They may, by special arrangement with the instructor, be taken as half-subjects in either half-year.

*5. Latin Composition. This course may accompany Latin 1 or be taken later in connection with other subjects offered by the department. T J *Tu. 6.* PROFESSOR DENISON

6. Latin Composition. Latin 6 is open only to students who have completed Latin 5. In it particular attention is paid to idiom and style. By reason of the variation of the work from year to year, the subject may be taken a second time with due credit. *One hour, to be arranged.*

PROFESSOR DENISON

[8. Terence, Phormio; Cicero, De Officiis, and Dream of Scipio. *Three hours, to be arranged.* (S) PROFESSOR DENISON]

9. The Elegiac Poets, Tibullus, Propertius, and Ovid. *Three hours, to be arranged.* (S) PROFESSOR DENISON

[10. Lucretius, selections; Vergil, Georgics; Seneca, Medea. *Three hours, to be arranged.* (S) PROFESSOR DENISON]

Latin 8, 9, and 10 are half-subjects, and are given, one each year, in regular rotation, if elected by a reasonable number of students. They are open to students who have completed Latin 1, but are intended to be supplementary to, not a substitute for, 2, 3, and 4. Those who wish to widen the range of their Latin reading will find these subjects suited to that end.

NOTE: — The attention of Greek and Latin students is called to related subjects listed under Classical Archæology.

62 GREEK

PROFESSOR WADE

The aim of the department is to treat the Greek language not merely as a disciplinary instrument, but as a factor in the broadest and most liberal culture. Throughout the course the practice of reading at sight is encouraged, and especial effort is made to

develop such facility that the student may resort with pleasure to the masterpieces of the Greek language, and find in them the delights and inspiration of a noble literature.

To this end also considerable attention is paid to the style and literary characteristics of the authors read. The relations of Greek to the Latin, German, and English languages are discussed, and the course is shaped to develop, discipline, and enrich the linguistic resources of the student. Reading without translation is encouraged from the beginning. Incidentally, studies are made of the customs and daily life of the people. Discussion relative to the laws, philosophy, and religion of the Greeks is introduced, and some attempt is made to exhibit the indebtedness of modern civilization to Hellenism.

SUBJECTS

*1. Elementary. Goodwin's Grammar; Xenophon, Anabasis; Homer. *Double subject. Daily:* T J *MWF 2; TTS 4.*
PROFESSOR WADE AND PROFESSOR DAVIES

Greek 1 is intended for students entering without Greek and wishing to begin the study of that language. It is assumed that their previous training in linguistic studies will enable them to proceed rapidly and accomplish in one year all the work usually done in preparation for college. This subject may be taken (without credit) as a normal course by advanced students, on consultation with the instructor.

**2. Xenophon, Memorabilia; Homer, Odyssey; Euripides, one play. T *MWF 4*; J *MWF 6.* PROFESSOR WADE

Greek 2 is for students who have passed Greek 1, or the entrance requirements in Greek.

3. Herodotus, Books VII and VIII; Æschylus, The Persians; Sophocles, Antigone; Euripides, Alcestis. T J *MWF 5.* PROFESSOR WADE

4. Lyric and Elegiac Poets, to Pindar. Aristophanes: Clouds, Birds, Acharnians, Frogs, with study of social life in Athens in the fifth century B. C. *Three hours, to be arranged.* PROFESSOR WADE

[5. Theocritus, Idyls, with study of the Alexandrine age; Lucian; Homer, the Iliad, or the Odyssey, entire, with lectures on the results of the more recent investigations of the Homeric question. *Three hours, to be arranged.* PROFESSOR WADE]

Subjects 4 and 5 will be given in alternate years, and are designed for those who have completed Greek 3 or its equivalent. They may, by arrangement with the instructor, be taken as half-subjects in either half-year.

**6. Greek Composition; practice in sight reading. *One hour, to be arranged.* PROFESSOR WADE

Greek 6 may be taken by any one who has had the equivalent of Greek 1.

7. Greek Composition; reading at sight. *One hour, to be arranged.* PROFESSOR WADE

Greek 7 is open only to students who have completed Greek 6.

NOTE:—No student can be recommended as a teacher of Greek who has not taken at least one subject in Greek composition.

8. Plato: several of the shorter dialogues. *Three hours, to be arranged.* (F) PROFESSOR WADE

Greek 8 is open to students who have completed Greek 2.

28 CLASSICAL ARCHÆOLOGY

Under Classical Archæology are grouped subjects of the Greek and Latin departments which deal, to a large measure in lecture form, with the art, life (both public and private), and religion of the ancient Greeks and Romans. The work will consist of lectures, collateral reading and investigation, and papers. There will be illustration, wherever possible, with photographs, stereopticon, and specimens. The following subjects are intended to supplement the reading of classical authors, which naturally forms the basis of serious study in Classical Archæology. It is intended to give two subjects each year, as follows:—

SUBJECTS

1. Greek, Roman, and Etruscan Architecture. T J *MWF* 4. (F) PROFESSOR DENISON

2. Greek and Roman Sculpture. T J *MWF* 4. (S) PROFESSOR WADE

[3. Roman Private Life. T J *MWF* 4. (F) PROFESSOR DENISON]

Classical Archæology 3 will be given in 1911-12.

[4. Greek Private Life. T J *MWF* 4. (S) PROFESSOR WADE]

In subjects 3 and 4 there will be systematic treatment of such topics as the customs pertaining to birth, education, marriage, death, the house, furniture, dress, meals, amusements.

[5. Roman Public Life. T J *MWF* 4. (F) PROFESSOR DENISON]

Classical Archæology 4 and 5 will be given in 1912–13.

[6. Greek Public Life. T J *MWF* 4. (S) PROFESSOR WADE]

In subjects 5 and 6 there will be systematic study of such topics as the geography and topography of the ancient world, commerce and navigation,

political, legal, and military institutions, measures and money, books, inscriptions, religion and festivals, chronology and calendar.

Classical Archæology 6 will be given in 1911-12.

16 PHILOSOPHY*

PROFESSOR CUSHMAN AND PROFESSOR TOUSEY

The department offers work in all the traditional branches of philosophy, adapted to the needs of many kinds of students. To the specialist in science it affords a comprehensive view of the sciences from the point of view of metaphysics. To the student seeking general culture it affords the liberalizing study of the history of philosophy. To the student of mathematics it commends logic as a necessary supplement to his work. To the specialist in philosophy it will give work as far as an undergraduate should go. The beginner has open to him the choice of two subjects: logic and the history of philosophy. In all cases where there is opportunity it is advised that the student begin with the history of philosophy. To follow this natural course makes of philosophy an inductive science. The other subjects may then follow at the student's option, or as his specific needs seem to demand. Students choosing philosophy as their major department will be expected to take at least three term hours each in the history of philosophy, logic, and psychology, and to make up three years of continuous work. The Philosophical Club holds meetings during the year. It gives opportunity to the students of discussing philosophical subjects collateral with the regular work, and often invites eminent persons to address it on special topics.

INTRODUCTORY SUBJECTS

☞Before pursuing Advanced Subjects in philosophy, students must have passed satisfactorily in one of these Introductory Subjects.

1. History of Ancient Philosophy: the religious period of ancient thought, the pre-Socratic Greeks, the Greek Enlightenment, Plato and Aristotle; the Hellenic-Roman thought, including Stoicism, Epicureanism, neo-Platonism, and early Christianity. Lectures, and text-book: Cush-

* The three departments of Philosophy, History and Public Law, and Political Science constitute the group of Mental and Moral Science, in at least two of which twelve term-hours of work are required for the degree of A.B.

man's Beginner's History of Philosophy. T *TTS 4.* J *Hours to be arranged.* (F) PROFESSOR CUSHMAN

2. History of Modern Philosophy: the beginnings of modern thought in the middle ages, the Renaissance (1500-1690), the modern Enlightenment (1690-1781), German philosophy from Kant to Hegel (1781-1831), modern Evolution theories. Lectures and text-book; Cushman's Beginner's History of Philosophy. T *TTS 4.* J *Hours to be arranged.* (S) PROFESSOR CUSHMAN

3. Logic. Scope of the science; psychological data; concepts and propositions; first principles of thought; inference, deductive and inductive; elementary study of fallacies. T J *MWF 7.* (F) PROFESSOR TOUSEY

ADVANCED SUBJECTS

4. Logic. Special discussion of the more important themes of Philosophy 3; particular consideration of scientific method; recent developments of the science; fallacious tendencies of mind; advanced treatment of fallacies. T J *MWF 7.* (S) PROFESSOR TOUSEY

Philosophy 4 is open only to those who have received credit in Philosophy 3.

[17. Logic. Studies in argumentative literature, with the aim to bring logical theory into relation with the practical requirements of research, advocacy, and criticism; and to illustrate the principles governing the effective presentation of arguments. Use will be made of selected examples of reasoned discourse, supplemented by discussions, and constructive work by the student. *Three hours, to be arranged.* (S) PROFESSOR TOUSEY]

Philosophy 17 is open only to those who have received credit in Philosophy 3.

6. Ethics, Theory of. The moral nature; springs of conduct; moral judgments; theories of the moral standard, particularly sentimentalism, hedonism, rigorism, eudæmonism; moral volition, with critical examination of the doctrines of free will and determinism; the moral ideal. Text-books, lectures, assigned reading, themes. T J *TTS 5.* (F) PROFESSOR TOUSEY

7. Ethics, Applied. Bearing of moral theory on the problems of (*a*) the individual life, (*b*) the social life. Special consideration of duties, rights, temperance, charities, moral pathology, penology, ethics of belief. Text-books, lectures, prescribed reading, and theses. T J *TTS 5.* (S) PROFESSOR TOUSEY

8. Ethics, Historical and Critical. History of ethical speculation; development of moral customs and ideals. Text-books, lectures, prescribed studies in the classics of ethical literature, and theses. *Three hours, to be arranged.* (F) PROFESSOR TOUSEY

9. Metaphysics: the Theory of Reality, including a review and criti-

cism of the common theories of life, such as materialism, realism, theism, mysticism, idealism, and the fundamental problems involved. Lectures, theses, text-book.

The problems discussed are those fundamental to science, ethics, æsthetics, and logic, considered from the point of view of metaphysics. Among these are the questions of teleology, consciousness and self-consciousness, personality, immortality, freedom and necessity, causation, nature, evil, beauty. *Three hours, to be arranged.* PROFESSOR CUSHMAN

[11. English Philosophy from Hobbes to Hume. The historical development of the English school of thought until Hume, with a critical and expository reading of the works of Hobbes, Locke, Berkeley, and Hume, together with a survey of contemporaneous and other political theories, such as those of Spinoza, Hooker, Rousseau, and Grotius. *Three hours, to be arranged.* (S) PROFESSOR CUSHMAN]

[12. The Philosophy of Kant. A careful critical and expository reading of the Critiques of the Pure Reason, the Practical Reason, and the Judgment, in Watson's translation. The historical position of Kant with reference to his predecessors and to his influence upon modern thought. Lectures, prescribed reading. *Three hours, to be arranged.* (S) PROFESSOR CUSHMAN]

13. Descartes, Spinoza, and Leibnitz, their historical development and doctrines, with a critical and expository reading of their works. Lectures and prescribed reading. *Three hours, to be arranged.* (S) PROFESSOR CUSHMAN

14. Plato: reading of the Dialogues. Jowett's translation. *Three hours, to be arranged.* PROFESSOR CUSHMAN

15. The Philosophy of Theism. The final problem; limits of the intelligence; final cause in nature; evidences of a moral order; theistic and anti-theistic argumentation; intuitivism. *Three hours, to be arranged.* PROFESSOR TOUSEY

26 PSYCHOLOGY AND EDUCATION

PROFESSOR SCOTT

The work of the department is expected not only to prepare for teaching but to give a general idea of the facts of mental life, to study human and animal behavior in such a way as to be valuable to any student. The social point of view will be made prominent, particularly in the course in Education. Laboratory work will illustrate and supplement reading, discussion and lectures. Genetic psychology, child-study, school hy-

giene, and the psychology of art and religion will be somewhat briefly outlined.

The course in Psychology should be regarded as fundamental, and where possible should be taken previously to that in Education, which must assume a knowledge of the psychological point of view. The aim of the work in the History of Education is to study the past in such a way as to throw a light upon our present institutions. Naturally, the ferment of the Renaissance and the lives of the great educational thinkers of that time will form an important part of the course.

SUBJECTS

5. Psychology as a science. Object and methods. Attention, volition, feeling, perception, sensation; the psychology of memory and imagination; habit and the process of learning; fatigue; the evolution of mind; the minds of animals; child study; the psychology of the higher intellectual processes; judgment, conception, reasoning; the psychology of the feelings and instincts; fear, anger, jealousy, crying and laughing; constructive instinct; play; initiation and co-operation; the dramatic instinct. T J *TTS 4.* PROFESSOR SCOTT

1. History of Education. Education in Greece and Rome; Medieval universities and schools; the Renaissance and its effect upon previous institutions; the history of education as a part of *Culturgeschichte*, Sturm, Comenius, Rousseau, Pestalozzi, Froebel. T J *TTS 2.* (F)
PROFESSOR SCOTT

2. Principles and philosophy of Education; educational ideals; correlation; social education; the experimental study of education; methods; punishment; school hygiene; the hygiene of study; the hygiene of teaching; present school systems. T J *TTS 2.* (S) *Open to those who have taken 26-1.* PROFESSOR SCOTT

36 HISTORY AND 46 PUBLIC LAW*

PROFESSOR EVANS AND PROFESSOR BOLLES

The department aims to develop the idea of unity in the history of mankind, and to make the study of all history of practical value through its relation to present-day problems and conditions. To this end the approach is made through subjects intended to give a thorough scientific knowledge of essential facts, and so arranged as to show these facts in their proper

*See note to introduction of the Department of Philosophy.

relations. History 1 is the introductory subject by which the student is prepared for more detailed work. History 2 is devoted to the history of England, History 3 to the history of the United States. The subjects numbered from 4 to 7 offer to properly qualified students opportunity to make a more detailed study of limited periods. These subjects are arranged in two series, which alternate with each other from year to year, and thus cover a considerable range. History 15 is devoted to research.

Students expecting to make History their principal study are urged to devote considerable time in their first and second years to the study of modern languages. In History 4, 5, 6, and 7 a reading knowledge of French is assumed.

In the division of Public Law and Administration the object is to furnish such general knowledge of political institutions and their working as is needed by every intelligent citizen, and also to assist those who expect to enter the legal profession or the government service. The study of law and government is closely related to the study of history, and hence one year of history is required for admission to the work in Public Law. The work in this group begins with a study of the political institutions of the United States, which is followed by more advanced subjects dealing with the institutions of our own and other countries, as well as by subjects treating international relations, and the history and principles of jurisprudence. A knowledge of French is desirable, and in some cases indispensable.

36 History

SUBJECTS

1. The General History of Europe since the Fall of Rome. History 1 is an outline course, designed to give a comprehensive view of the various political, religious, industrial, and social factors of the history of Europe, and thus to pave the way for a more detailed study of limited periods. Text-books, lectures, assigned readings, and the preparation of themes.

T J *TTS* 5. PROFESSOR EVANS, MR. MASON, AND MR. HOPKINS

History 1 and 2 will not be accepted for an advanced degree. Students desiring to take as many subjects as possible in the department should elect History 1 and 2 in their second year.

2. General History of England. Text-book, lectures, analyses, and themes. T *MWF 2;* J *Hours to be arranged.* PROFESSOR BOLLES

3. General History of America Text-book, lectures, analyses, and themes. T *MWF 4;* J *Hours to be arranged.* PROFESSOR BOLLES

[4. The History of the Continent during the Seventeenth and Eighteenth Centuries. A somewhat detailed study of the rise of Russia, the creation of Prussia, the rule of Richelieu and Mazarin, the age of Louis XIV; and the Ancient Regime. T J *TTS 3.* (F) PROFESSOR EVANS]

[5. The Expansion of Europe through the establishment of Colonies. A study of the acquisition of colonial dominion, the operations of the great trading companies, the rivalry of the European states in America and India, the Spanish colonial system in America and the Philippines, and the colonization and partition of Africa. T J *TTS 3.* (S) PROFESSOR EVANS]

History 4 and 5 may be expected in 1911–12.

6. The French Revolution and the Napoleonic Period. The history of Europe from 1789 to 1815. T J *TTS 3.*

PROFESSOR EVANS AND MR. MASON

7. The Nineteenth Century. One of the chief purposes of History 7 is to furnish some explanation of present-day questions in European politics. T J *TTS 3.* (S) PROFESSOR EVANS AND MR. MASON

History 6 and 7 will not be given in 1911–12, but may be expected in 1912-13

15. Seminary in History and Public Law. Investigation of selected topics from the sources. During the year 1909–10 the principal subject of study will be the diplomatic history of the United States. History 15 is open only to such students, making History their major subject, as receive the special permission of the instructor. *Hours and credit to be arranged with the instructor.* PROFESSOR EVANS

46 Public Law and Administration

SUBJECTS

☞ History 1 must precede all subjects in Public Law. Students desiring to take all the subjects in this group should elect History 1 in their second year, and Public Law 1 and 2, or their alternates, in their third year.

1. Political Institutions of the United States — Federal, State, and Municipal. A study is made of government from the standpoint both of constitutional arrangements and of its actual working as modified by usage and existing conditions. Political parties and their organization, together with the attempts made to regulate them by law, will be studied. Text-book: Bryce, The American Commonwealth, accompanied by lectures, assigned readings, and the preparation of a thesis. T J *TTS 2.* (F)

PROFESSOR EVANS AND MR. MASON

2. Constitutional Law. A study of the Constitution of the United States, as interpreted in the chief decisions of the Supreme Court. T J *TTS 2*. (S) PROFESSOR EVANS AND MR. MASON

Public Law 1 and 2 will not be given in 1911-12, but may be expected in 1912–13.

[4. European Government and Politics. A study of the constitutions of the chief European states, together with a consideration of some of the most important questions of European politics. A reading knowledge of French is desirable. Text-book, lectures, assigned reading, and the preparation of a thesis. T J *TTS 2*. (F) PROFESSOR EVANS]

[5. International Law and the History of Diplomacy: the history of international law, a consideration of its leading principles, and some account of the most important treaties and diplomatic controversies. Text-book, lectures, assigned readings, and the preparation of a thesis. T J *TTS 2*. (F) PROFESSOR EVANS]

[7. Elements of Jurisprudence. A study of the leading juristic principles, based on the Institutes of Justinian and Blackstone's Commentaries, designed to fit students for a more intelligent study of the law from a professional standpoint. T J *TTS 2*. (S) PROFESSOR EVANS]

Public Law 5 and 7 may be expected in 1911-12.

66 POLITICAL SCIENCE*

PROFESSOR METCALF

In its course of instruction, the chief aim of the department of Political Science is to give a general view of the most important branches of economics, beginning with the elements of the science and passing by degrees to work of the investigative order. In addition to this broad general outline of economics, the courses and the methods of study are arranged with reference to the constantly increasing needs of those who are fitting themselves for various practical careers, such as banking, transportation, or mercantile work; and to those who look forward to social and philanthropic work as a profession. Subjects 3, 13, 6, 16 and 12 are especially designed as training for those who are planning for a business career, or for social and philanthropic work as a profession. They should be taken in the Junior and Senior years, and are open only to students who are especially qualified to do the work.

*See note to introduction of the Department of Philosophy.

Subject 1 is designed to lay the foundation for the more advanced work, but endeavors at the same time to satisfy the wants of those who seek simply a general knowledge of economics. It is open to Freshmen. The character of the work in the advanced subjects is outlined in connection with the following statement.

SUBJECTS

*1. Elements of Economics. (a) Exposition of the fundamental principles of the production, distribution, exchange, and consumption of wealth. Economics 1 does not count for honors. (b) The present organization of industry, trades unions, coöperation, profit-sharing, immigration, child labor, woman in industry, factory legislation, workingmen's insurance, socialism. Ely's Outlines of Economics will be used as a guide. T *MWF* 7; J *MWF* 3. MR. BLAKEY

[2. Modern Industrial History of Europe. After a brief survey of the economic conditions in the European countries at the close of the Middle Ages, the chief attention will be given to the Industrial Revolution in England, and to the rise of modern industrial Germany. Lectures and recitations. T J *MWF* 4. (F) MR. BLAKEY]

22. Economic and Industrial History of the United States. Bogart's Economic History of the United States is used as a guide. T J *MWF* 4. MR. BLAKEY

3. Sociology. This course will be theoretical, dealing with the nature and scope of Sociology, its relation to other studies, especially to Philosophy, Ethics and Economics, with consideration of various theories of social progress. Lectures, discussions and assigned reading, principally from Carver's "Sociology and Social Progress." *Three hours, to be arranged.* (F) MR. BRISTOL

13. Practical Sociology. Theory and method of statistics; problems of population and their social significance; history of poor relief; modern scientific philanthropy. Such topics will be discussed as the family, wealth and poverty, the temperance question, criminology, penology, social achievement in the United States. *Three hours, to be arranged.* (S) MR. BRISTOL

[4. Principles of Public Finance. Public expenditures; classification of public revenues; recent reforms in taxation; the development and significance of public debts; financial administration; recent European and American works on finance. The Elements of Public Finance, by Daniels, is used as a guide. Lectures and discussions. *Three hours, to be arranged.* (F) PROFESSOR METCALF]

[5. Money, Credit, and Banking: an historical course, with special ref-

erence to the financial experience of the United States. Leading topics are Hamilton's financial system; protection and revenue tariffs; the bank question; the fiscal policy of the Civil War; resumption of specie payments; the national banking system; state and local taxation; silver legislation and the panic of 1893; government loans; present currency problems. Dewey's Financial History of the United States is used as a guide. *Three hours, to be arranged.* (S) MR. BLAKEY]

6. Modern Industrial Combinations. The economics of corporations, with special reference to the so-called trust problem. Among the topics treated are trust promotion, capitalization, trusts and industrial efficiency, influence of combinations upon prices, profits, wages, rights of investors, international trade, industrial stability, and business honor; the practical results attained through publicity, taxation, and State regulation. Lectures, recitations, and reports. T J *TTS 3*. (F) PROFESSOR METCALF

16. Modern Labor Problems. This subject deals mainly with the social and economic problems arising from the relations of employers and their laborers. The chief topics will be the growth, methods, and aims of modern associations of wage earners; methods of conciliation and arbitration; strike and factory legislation; employers' liability and recent compensation acts; compulsory publicity; provident institutions and friendly societies. Each member of the class will be expected to make a report upon a labor union. Lectures and recitations. T J *TTS 3*. (S) PROFESSOR METCALF

[10. Transportation Problems. The economic, financial, and social problems arising from modern systems of transportation, with special reference to railway transportation in the United States. The chief topics are: brief historic survey of water and railway transportation; railway charters, powers of directors and stockholders, the nature of railway securities; railway traffic; fares, rate making, rebates, pooling and railway consolidations; the American systems of State railway commissions, the Interstate Commerce Commission, the recent extensions of Federal control; the effects of transportation systems upon industrial competition. A part of the time will be devoted to some of the more recent problems of electric railway development. A special report will be required from each student of the subject. Lectures and recitations. *Three hours, to be arranged.* (S) PROFESSOR METCALF]

12. Business Organization and Management The structure of modern industry; increased complexity and integration of business structure; different systems of business organization; norms of standardization; staff and departmental organization; departments of research and industrial improvement. The standard of business honor; cultural bearing of business enterprise. Can business callings be placed upon a professional basis?

Women and Industry. Women's fitness for industrial life; women's pay; the place of domestic service in industry; occupational opportunities.

Betterment. Industrial hygiene; welfare work as a means of maintaining friendly relations between employer and employed; essential principles of welfare work; examples of successful welfare institutions in the United States and in Europe; the functions of the welfare manager; welfare work as a profession for men and women.

Industrial Education. Unemployment and misemployment; industrial education and industrial efficiency; the State and industrial education; demand for such education; the relation between academic and technical education; types of trade and industrial schools; trade education and trade unions: industrial education as a social force; the education best suited for those entering upon trade and commerce; the demand for teachers of industrial and trade training.

Social Technology. Education for social efficiency; social work, social legislation, social settlements; principles adapted to the work of social organizers. Social and philanthropic work as a profession for men and women. *Three hours, to be arranged.* PROFESSOR METCALF

[8. Municipal Problems in Europe and the United States. Growth of modern cities, municipal monopolies, public works, recreation, sanitation; the public control, ownership, and operation of public service utilities, such as gas works, electric lighting plants, and street railway systems; the advantages and disadvantages of municipal trade; municipal trade and socialism. Lectures and recitations. T J *MWF* 4. (S)
PROFESSOR METCALF]

Economics 8 may be expected in 1911-12.

[7. The History of Economics: an account of the beginnings, the progress, and the various schools of economic science; study of the writings of Adam Smith, Ricardo, Mill, and others. Political Science 7 is open to advanced students who are specializing in the department. A reading knowledge of French and German is desirable. *Three hours, to be arranged.* (S) PROFESSOR METCALF]

9. Seminar in Economics and Sociology, designed for advanced students who are specializing in the department. Questions in economics, statistics, or sociology may be selected. *Hours and credit to be arranged.*
PROFESSOR METCALF, MR. BLAKEY AND MR. BRISTOL

14 MATHEMATICS

PROFESSOR WREN AND PROFESSOR RANSOM

The aim of the instruction in mathematics is to cultivate power of exact thinking, as well as skill in symbolic methods of drawing necessary conclusions. The class-room work is a com-

bination of lectures with questioning of the students to ascertain that the points presented have been duly comprehended.

Mathematics 3, with 1 or 2, constitutes the required work in mathematics. The two required subjects should be taken in the Freshman year. Students who intend to pursue advanced work in the department should take 1 in preference to 2, and should take 4, 5, and 6 in the Sophomore and Junior years. They may then elect any of the remaining subjects.

Certain subjects in the Engineering School are of great value in supplementing and illustrating mathematical studies. Attention is called especially to Drawing 21-5 (which must be preceded by 21-1), to Civil Engineering 41-3, and courses in Applied Mechanics and Structural Engineering.

SUBJECTS

3. Trigonometry. T *MWF 2, 3*; J *MWF 7*. (F)
PROFESSOR WREN AND MR. BRAY

1. Algebra. T *MWF 2, 3*; J *MWF 7*.
PROFESSOR WREN AND MR. BRAY

2. Solid Geometry. *Three hours, to be arranged.* (S) MR. DILLINGHAM

4. Analytic Geometry. T *TTS 4*; J *Hours to be arranged.* (F)
PROFESSOR WREN AND MR. BRAY

5. Elements of Calculus. T *TTS 4*; J *Hours to be arranged.* (S)
PROFESSOR WREN AND MR. BRAY

6. Differential and Integral Calculus. *Three hours, to be arranged.* (F)
PROFESSOR WREN

7. Differential and Integral Calculus (advanced). T J *MWF 4*. (S)
PROFESSOR WREN

9. Theory of Equations and Determinants. *Three hours, to be arranged.* (F)
PROFESSOR RANSOM

10. Differential Equations. *Three hours, to be arranged.* (S)
PROFESSOR WREN

12. Quaternions or Vector Analysis. *Three hours, to be arranged.* (F)
PROFESSOR RANSOM

Mathematics 12 is open to students who have completed Mathematics 1, 2, 3, 4, 5, and 6.

[14. Theoretical Mechanics. *Three hours, to be arranged.* (F) or (S)
PROFESSOR RANSOM]

24 PHYSICS

PROFESSOR H. G. CHASE

Two subjects are open to those who are beginning Physics. Physics 1 is intended primarily for students in the School of Liberal Arts who are taking but six hours in physics as a part of the prescribed work in science. Physics 31-1 is a subject for engineers and is recommended for those who are to continue the work of the department. A text-book is used in each subject, practical comments and additional material are supplied, and frequent lectures are given, with experiments. The aim is to present the science of physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, from which all the various phenomena are deducible. In each branch there are frequent returns to these first principles.

In the laboratory students are given a syllabus of the work for a guide. This syllabus is supplemented by Glazebrook's Physical Optics; Kaulrausch's Measurements; Stewart and Gee's Practical Physics, vols. 1 and 2; Glazebrook and Shaw's Practical Physics; Nichols's Laboratory Manual, vols. 1 and 2; and Watson's Practical Physics. In addition to the experimental and note-book work, many problems are solved.

The attention of major students in the department is called to the courses offered in the department of Electrical Engineering, and to the work in Applied Mechanics. Major students are strongly advised to elect the course in Mechanical Drawing.

SUBJECTS

1. General Physics. Lectures and experiments. Physics 1 is to be taken by students who choose physics for their prescribed science subject, and who do not intend to continue the work of the department. T *TTS 4*; J *MWF 4*. PROFESSOR H. G. CHASE

Mathematics 3 must precede or accompany Physics 1.

31-1. Mechanics and Sound. Physics 31-1 is introductory to all the other subjects offered by the department, except Physics 1. T J *TTS 5*. (s) PROFESSOR H. G. CHASE, MR. MORLEY, AND MR. PRIEST

Mathematics 3, or its equivalent, must precede Physics 31-1.

31-2. Electricity and Magnetism, and Light. T J *TTS 5*. (F)
PROFESSOR H. G. CHASE, MR. MORLEY AND MR. PRIEST

31-3. Mechanics and Heat. T J *MWF 5*. (S)
PROFESSOR H. G. CHASE AND MR. MORLEY

31-4. Physical Laboratory. *First three hours twice a week, to be arranged.* PROFESSOR H. G. CHASE, MR. MORLEY AND MR. PRIEST

2. Electricity. Thompson's Elementary Lessons in Electricity and Magnetism. Lectures and recitations. *Three hours, to be arranged.* (S)
PROFESSOR H. G. CHASE OR MR. MORLEY

6. Light and Sound. Recitations, lectures, and laboratory work. *Counting as six term hours. Hours to be arranged.*
PROFESSOR H. G. CHASE

9. Heat. Lectures and recitations, based on Preston's Theory of Heat. Mathematics 6 is a prerequisite of Physics 9. *Counting as three term hours. Hours to be arranged.* (F) PROFESSOR H. G. CHASE

10. Lecture table experiments. Lectures, recitations, laboratory work, demonstrations, and practice in teaching; intended for those who are to become teachers. Open to students who have taken Physics 1, or 31-1 and 31-2, and 31-4. *Hours to be arranged. Counting as three term hours.* (S)
PROFESSOR H. G. CHASE

NOTE. Courses numbered 31-1 and over are intended primarily for Engineers.

34 CHEMISTRY

PROFESSOR DURKEE AND ASSISTANT PROFESSOR COBB

The work in the department begins with Chemistry 1, which is open for election by the students of the courses in liberal arts, and is required of engineering students in their second year. The instruction is by means of lectures, recitations, and laboratory work. The lectures, illustrated with numerous experiments, are intended to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including a brief account of the chemistry of the carbon compounds and the principal technical processes. One-half of the time devoted to this subject is given to practical work in the laboratory, and the student has an opportunity to verify some of the chemical theories, and to become familiar with substances and their chemical behavior. The lectures are supplemented with recitations and written exercises. An opportunity to continue

the study of theoretical and advanced inorganic chemistry is afforded by subject 11, a course of lectures with laboratory practice, in which simple physical and chemical measurements are made.

The instruction in qualitative analysis is given through a year, in two subjects (2 and 3), taught in part by lectures and recitations, but mainly by work in the laboratory. During the advanced course the student is required to analyze correctly alloys, mixtures of salts, minerals, slags, and other metallurgical products. Quantitative analysis is taught for the most part in the laboratory, and is designed to give the student the theoretical knowledge and skill in manipulation which are necessary for success in this kind of work. In subject 4 the student is required to analyze the simpler salts, alloys, and minerals. In subject 5 water and the more complicated minerals, ores, and commercial and food products are analyzed. Organic analysis is included in subject 5. Technical gas analysis (subject 9) is taught by lectures and laboratory work. The Orsat, Hempel, and Elliott systems are used. Assaying (subject 7) is adapted to familiarizing the student with the practical methods and theory of sampling and assaying gold and silver ores. The above subjects cover a comprehensive study of analytic chemistry, and are intended to give the student such thorough theoretical and practical knowledge as to prepare him for analytical work of almost any description. Metallurgy (subject 8) is intended to give the student some of the more important methods of extracting gold and silver from ores. It should be taken after or in connection with Fire Assay (subject 7). The metallurgy of iron and steel is an alternative.

The work in organic chemistry consists of a course of experimental lectures, together with recitations and laboratory work, which are designed to cover the general principles and methods, and include a description of the most important organic compounds. The laboratory practice in organic chemistry will be carried on in connection with subject 10, and will include the preparation of many typical compounds.

In Chemistry 12, opportunity will be given advanced students, under the direction of instructors, for the consideration and discussion of chemical subjects and recent investigations.

The quantitative and organic laboratories are open from nine to five o'clock daily, Saturday afternoons excepted.

SUBJECTS

1. General Chemistry. Lectures, recitations, and laboratory work. T J *TT 7, S 1, 2, 3. Counting as six term hours.*
PROFESSOR DURKEE, ASSISTANT PROFESSOR COBB
DR. MUELLER AND ASSISTANTS

35-2. Qualitative Analysis. Basic analysis. Lectures, laboratory work and recitations. T J *MWF 6, 7*; or *MW 1, 2, 3.* (F) *Counting as two term hours.* PROFESSOR DURKEE, DR. MUELLER, AND ASSISTANTS

35-3. Qualitative Analysis. Acids, analysis of salts, commercial and natural products. Lectures, laboratory work, and recitations. T J *MWF 6, 7*; or *MW 1, 2, 3.* (S) *Counting as two term hours.* DR. MUELLER

4. Quantitative Analysis. Gravimetric and volumetric analysis; analysis of minerals. Lectures and laboratory work. T J *TTS 1, 2, 3. Counting as six term hours.* PROFESSOR DURKEE

5. Quantitative Analysis (advanced course). Analysis of minerals, ores, water, food products, organic analysis. Laboratory work. T J *TTS 1, 2, 3. Counting as six term hours.* PROFESSOR DURKEE

7. Fire Assay. Open to students who have taken 1, 2, 3, and 4. *Hours to be arranged.* (S) *Counting as two term hours.*
PROFESSOR DURKEE

8. Metallurgy of Gold and Silver. Lectures, recitations, and laboratory work. Chemistry 8 is open to students who have taken Chemistry 1. Metallurgy of iron and steel is alternative. *Hours to be arranged.* (S) *Counting as two term hours.* PROFESSOR DURKEE

9. Gas Analysis. Lectures and laboratory work. Chemistry 9 is open to students who have taken Chemistry 1, 2, 3, and 4. *Hours to be arranged.* (F) *Counting as one term hour.* PROFESSOR DURKEE

35-10. Organic Chemistry. Lectures, recitations, and laboratory work, Chemistry 10 is open to students who have taken Chemistry 1. T J *TTS 5. Three hours of laboratory work, to be arranged. Counting as eight term hours.* ASSISTANT PROFESSOR COBB

11. Theoretical and Advanced Inorganic Chemistry. Lectures, recitations, and laboratory work. Chemistry 11 is open to students who have

taken Chemistry 1, 2, and 4. T J *WF 5. Two hours of laboratory work, to be arranged. Counting as six term hours.*

ASSISTANT PROFESSOR COBB

12. Discussion of Chemical Subjects and Recent Investigations. *One hour a week.* PROFESSOR DURKEE AND ASSISTANT PROFESSOR COBB

17. Applied Chemistry. A course dealing with the most important applications of inorganic and organic chemistry to manufacturing purposes, such as the production of sulphuric acid, soda, illuminating gas, and sugar. Lectures, visits to plants, text-book work, and recitations. *Three periods a week for the year, two lectures or recitations and one three-hour laboratory period, counting as six term hours.* PROFESSOR DURKEE

16. Thesis. Investigation of a problem in Inorganic, Organic, or Technical Chemistry. Open to students of A.B. and Science Courses who have satisfactorily completed Chemistry 1, 2, 3, 4, 5, and 10. *Nine laboratory hours a week for the year, to be arranged. Counting as six term hours.*

PROFESSOR DURKEE AND ASSISTANT PROFESSOR COBB

19. Chemistry. This course is primarily intended to enable the students to acquire facility in reading chemical German. The work consists of recitations and special reports on assigned subjects. These assignments are chiefly to articles in the German chemical journals. Open to Juniors and Seniors, candidates for A. B. or B. S., taking chemistry as a major subject, who have had not less than two years of college German or its equivalent. *Three hours, to be arranged.* (F) ASSISTANT PROFESSOR COBB

44 BIOLOGY

PROFESSOR KINGSLEY AND ASSISTANT PROFESSOR LAMBERT

Instruction in biology is given both by lectures and by laboratory work, the object being to impart the scientific method of work and thought rather than to cram the student with a large number of unimportant facts. In the laboratory, sixty-four hours of work for each half-year is the minimum, but mere time service is not sufficient: a certain series of forms must be studied, to the satisfaction of the instructors.

Biology 1 is intended for those who wish to take but a single year of work in this department. Major students, and candidates for the degree of Bachelor of Science in the General Science or the Medical Preparatory Course, will take Biology 2 and 3 in its place. Special students, coming for a single year before entering the Medical School, will take Biology 3.

By special arrangement with the instructor, additional work may be done in connection with Biology 2 and 3, and corresponding credit will be given. Intention of doing such work must be indicated at the time of registration, and the student must also attain grade B in order to obtain such credit.

Three of the subjects in this department (4M, 5M, and 9) are given at the Medical School, 416-430 Huntington Avenue, Boston. These subjects may be taken by candidates for the bachelor's degree, and in this way students contemplating the study of medicine may anticipate one year of their professional course. Those who wish these subjects to count for the bachelor's degree must have previously taken at least Biology 3.

There are three well-lighted laboratories, furnished with every requisite for good work, including microscopes, microtomes, reagents, and abundant material for illustration and dissection. There is also a department library containing more than 3,300 volumes and over 8,000 pamphlets and parts of volumes, while the college library contains the proceedings of many learned societies, both American and foreign. Besides these, proximity to Boston and Cambridge gives easy access to library facilities unequaled in any other part of America. There is required from all students taking laboratory subjects a laboratory fee of two-dollars-and-a-half a term for each subject, payable in advance.

SUBJECTS

1. General Biology. *Two lectures and four hours of laboratory work, to be arranged. Counting as six term hours.*

PROFESSOR KINGSLEY, MR. DANFORTH AND MR. CHAPMAN

[2. Morphology of Invertebrates. *Two lectures and four hours of laboratory work, to be arranged. Counting as six term hours.*

PROFESSOR KINGSLEY]

Biology 2 will be given in 1911-12.

3. Morphology of Vertebrates. Continuation of Biology 2. *Two lectures and four hours of laboratory work, to be arranged. Counting as six term hours.* PROFESSOR KINGSLEY

Biology 3 will not be given in 1911-12.

4M. Human and Comparative Physiology. Lectures, recitations, conferences, and laboratory work. *Hours and credit to be arranged.* (S)

PROFESSOR DEARBORN

Biology 4M is given at the Tufts Medical School, Boston.

5M. Histology, Medical. Lectures, quizzes, and laboratory work. *Hours and credit to be arranged.* (F)

PROFESSOR BATES AND DR. WINSLOW

Biology 5M is given at the Tufts Medical School, Boston.

6. Systematic Zoology. Laboratory work in the identification and classification of specimens. *Counting as three term hours.* (F) or (S)

PROFESSOR KINGSLEY

Biology 6 requires ability to read French and German.

[7. Botany. Lectures and laboratory work. *Hours to be arranged. Counting as six term hours.* ASSISTANT PROFESSOR LAMBERT]

Biology 7 may be expected in 1911-12.

8. Special Work. The investigation of some problem. *Three hours or more of credit, at the rate of thirty-two hours of laboratory work for one hour of credit.* PROFESSOR KINGSLEY

9. Human Anatomy. Lectures, quizzes, and dissection. *Hours and credit to be arranged.*

Biology 9 is given at the Tufts Medical School, Boston. (F)

PROFESSOR H. H. GERMAIN

54 GEOLOGY

PROFESSOR LANE

The subjects offered in the department of Geology do not form a sequence, but are intended to give different classes of students that knowledge of geology and mineralogy which they need. In all cases, they aim to include some real grasp upon the structure and history of the earth, the problems presented in the study thereof, and the modes of attack upon those problems. The first subject (Geology 1) is introductory, open to all, and intended primarily for those who have had no previous work in science.

The illustrative collections in these lines are ample. Besides exhibition specimens in the Barnum Museum, there is a working collection illustrating mineralogy, lithology, and dynamical and historical geology. These are supplemented with maps, diagrams, photographs, and lantern slides. The work in each

subject consists of lectures and recitations, together with work in the laboratory and in the field. Excursions are taken to neighboring points that illustrate certain phenomena. Tufts College is well placed for field work and for the study of various natural processes. The laboratory fees are four dollars for each subject in mineralogy, and two dollars in geology.

SUBJECTS

[1. Physical Geology and Geography. Lectures and recitations; laboratory and field work. *Three hours, to be arranged.* (S) PROFESSOR LANE]

Geology 1 may be given in 1911-12.

2. General and Economic Geology. Lectures, recitations, laboratory and field work, six hours a week; open to students who have taken Physics 1, Mathematics 3, and Chemistry 1. *Three hours, to be arranged.* PROFESSOR LANE

[3. Mathematical Problems presented to geologists. Conferences and critical reading of selected papers and original work. Mathematics 4 must precede Geology 3; Mathematics 6 must precede or accompany it. *Three hours, to be arranged.* PROFESSOR LANE]

Geology 3 may be given in 1911-12.

[4. Field Geology. Conference, one hour; field work, six hours a week; open to students who have taken Geology 2. *First part of first and last part of second half-year. Counting as three term hours.* PROFESSOR LANE]

64 MINERALOGY

1. Mineralogy and Lithology. Recitations (Pirrson) two hours; laboratory, four hours a week; open to students who have taken Chemistry 1. *Three hours, to be arranged.* (F) PROFESSOR LANE

Mineralogy 1 alone may be of use to civil and structural engineers, but those who are looking to mining or chemical engineering should take both courses, if any.

2. Crystallography and Descriptive Mineralogy. Open to students who have taken Mineralogy 1. *Two lectures and four hours laboratory work, to be arranged. Counting as three term hours.* (S) PROFESSOR LANE

DRAWING AND ENGINEERING

Subjects in Drawing, and in Civil, Structural, Mechanical, and Electrical Engineering, are open to competent students who are not looking for a technical course. For a list of those subjects, the hours, and the preparation required, consult the announcement of the Engineering School.

THEOLOGY

All the subjects offered in the Theological School are open to election by qualified students in the School of Liberal Arts. For details see the announcement of the Crane Theological School.

38 MUSIC

PROFESSOR LEWIS

The department of Music offers opportunities to gain a knowledge of musical history and of the principles of composition, as a basis for practical work in music or in musical criticism. The subjects, Elements of Theory, Harmony, General History of Music, and Musical Appreciation may well be taken, however, by students who have no intention of preparing themselves for professional work in the art.

SUBJECTS

9. Musical Appreciation, Elementary. Systematic studies in musical essentials from the listener's standpoint. *Three hours, to be arranged.* (F) PROFESSOR LEWIS

For Music 9 no technical preparation is requisite, but ability to recognize a melody is presupposed. Ability to follow a piano score is very helpful. Outside reading and laboratory study with automatic instruments are required.

10. Musical Appreciation, Intermediate. A continuation of Music 9. *Three hours, to be arranged.* (S) PROFESSOR LEWIS

[1. Elements of Theory. Lectures, practice, and analysis, with various text-books for reference. *Three hours, to be arranged.* (F) PROFESSOR LEWIS]

Only acquaintance with musical notation and with the piano keyboard is required. Music 1 is introductory to Music 21.

[21. Harmony. Lectures and practical work, based on Chadwick's Manual of Harmony; collateral reading on biography and theory. *Three hours, to be arranged.* (S) PROFESSOR LEWIS]

22. Advanced Harmony and Elementary Counterpoint. A continuation of Music 21. *Three hours, to be arranged.* (F) PROFESSOR LEWIS

A full equivalent of Music 21 must have been done by students who wish to begin their college work with Music 22.

[3. Sight-reading in Song, and Harmonic Analysis. *Three hours, to be arranged.* (S) PROFESSOR LEWIS]

Only those who have finished Music 22 may take Music 3. The harmonic analysis begun in Music 22 is continued, with special attention to the more difficult problems of modern music. Harmonic Analysis, by B. Cutter, and Melodia, by Cole and Lewis, are the text-books.

24. Counterpoint. Lectures and practical work, based on the manuals of Goetschius, Spalding, and others; collateral reading on biography and theory. *Three hours, to be arranged.* (S) PROFESSOR LEWIS.

Laboratory work with the automatic instruments is required.

[6. General History of Music, from the earliest times to the present day, with special attention to the period since the death of Palestrina. Lectures, with various treatises for reference. *Three hours, to be arranged.* (S) PROFESSOR LEWIS]

25. Studies in one or more of the following subjects: Canon, Fugue, Orchestration, Form, Free composition, Musical History, Musical Criticism. *Three hours, to be arranged.* PROFESSOR LEWIS

The studies may be directed by lectures, or may consist of individual work of students under the supervision of the instructor. Requirements as to previous studies in Music and in foreign languages will be given on application to the instructor.

48 THE FINE ARTS

PROFESSOR WHITTEMORE

The department of the Fine Arts stands collaterally with literature and music—offering an opportunity for the study of the history of painting, sculpture, architecture, and the minor arts. The subjects given are open to Sophomores, Juniors, and Seniors.

[2. The Fine Arts of the Middle Ages. T J *MWF 4.* (F) PROFESSOR WHITTEMORE]

[3. The Fine Arts of the Renaissance. T J *MWF 4.* (S) PROFESSOR WHITTEMORE]

4. The Fine Arts of Egypt, Assyria, and Greece. T J *MWF 4.* (F). PROFESSOR WHITTEMORE

5. The Fine Arts of China, Japan, India, and the nearer Orient. T J *TTS 4.* (S) PROFESSOR WHITTEMORE

88 PHYSICAL TRAINING

DR. MARTIN

The aim of the department is to secure the interest and participation of the students in such exercises and training as all students need for corrective, hygienic, and recreative purposes.

The objects of the work are a healthy body, erect carriage, self-control, fearlessness, muscular co-ordination, and symmetrical development. These objects are accomplished by regular class exercises in the gymnasium during the winter, by optional work after the class hours, and by out-door work in the fall and spring, when the weather is suitable.

Physical measurements and strength tests of all students are taken at the beginning and end of the gymnasium course, and also at such other times as seem necessary. These form the basis of comparison of the condition and needs of the student, and determine the character and amount of exercise necessary to overcome marked deficiencies, irregular development, or such deformities as may be benefited by physical exercise. The Freshmen will be given a series of lectures on the hygiene of diet, bathing, exercise, study, and recreation. Students may also receive personal advice with reference to habits of life. Regular exercise, — consisting of calisthenics, Swedish work, Indian club, wand, and dumb-bell drills, and the principles of heavy gymnastics, — as well as games and in-door and out-door athletics, is required two hours a week, from October to May, of all undergraduate students, for the first two years following entrance. Participation in any one of the organized sports may be substituted for the required work, for the time in which that sport is practiced. The work is optional the remaining years of the course.

The intention of the department is to make physical training of such character that the weakest as well as the strongest can engage in it with profit.

ELECTIVE PHYSICAL TRAINING

An advanced course, including theory and practice. Hygiene, elementary anatomy, physiology, first aid; the teaching of gymnastics, graduation of exercises, gymnasium management; advanced drills and apparatus work. Lectures, two hours a week (F); drills, two hours a week (F) and (S). *Counting as three term hours.*

ENGINEERING SCHOOL

Faculty of the Engineering School

RESIDENCE*

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT, 8 Professors Row

GARDNER C. ANTHONY, A.M., SC.D., DEAN . . 14 Professors Row
Professor of Technical Drawing. Acting Head of Department of Mechanical Engineering

PHILIP M. HAYDEN, A.B., SECRETARY . . . . . Dean Hall, 6
Professor of French and Registrar

CHARLES E. FAY, A.M., LITT.D. . . . . 92 Professors Row
Wade Professor of Modern Languages

WILLIAM L. HOOPER, A.M., PH.D. . . . . 124 Professors Row
Professor of Electrical Engineering

ALFRED C. LANE, A.M., PH.D. 1775 Massachusetts Ave., Cambridge
Pearson Professor of Geology and Mineralogy

FRANK B. SANBORN, C.E., M.S. . . 8 Buena Vista Park, Cambridge
Professor of Civil Engineering

FRANK W. DURKEE, A.M. . . . . 38 Professors Row
Professor of Inorganic Chemistry

EDWARD H. ROCKWELL, S.B. . . . 133 Powder House Boulevard,
Professor of Structural Engineering W. Somerville

CHARLES H. CHASE, S.B. . . . . 39 Lincoln St., Stoneham
Professor of Steam Engineering

HARRY G. CHASE, B.S. . . . . 37 Sawyer Avenue
Professor of Physics

SAMUEL C. EARLE, A.M. . . . . 45 Sawyer Avenue
Professor of English

HENRY C. METCALF, A.B., PH.D. . . 31 Sheffield Road, Winchester
Jackson Professor of Political Science

FRANK G. WREN, A.M. . . . . 65 Talbot Avenue
Walker Professor of Mathematics

SAMUEL L. CONNER, B.S. . . . . 10 Fairmount St.
Instructor in Railroad Engineering

* The post office address is Tufts College, Mass., unless otherwise indicated.

WILLIAM R. RANSOM, A.M. . . . . 29 Sawyer Avenue
Professor of Mathematics

WILLIAM H. REED, JR., A.M. . . . . 81 Walnut Ave., Roxbury
Assistant Professor of Modern Languages

CARLETON A. WHEELER, A.M. . . 14 Kirkland Place, Cambridge
Instructor in Modern Languages

GEORGE F. ASHLEY . . . . . 47 Avon St., Somerville
Assistant Professor of Technical Drawing

ERNEST R. GREENE, A.M. . . . . 18 Prentiss St., Cambridge
Instructor in Modern Languages

EDWIN B. ROLLINS, B.S. . . . . 38 Capen St.
Assistant Professor of Electrical Engineering

CHARLES E. STEWART, S.B. . . . . 389 Boston Ave.
Assistant Professor of Mechanic Arts

JAMES I. TUCKER, B.S., LL.B. . . . . 45 Sawyer Avenue
Assistant Professor of Civil Engineering

HOWARD H. CARROLL, S.B. . . . 15 Windermere Park, Arlington
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PHILIP H. COBB, A.B., PH.D. . . . . Dean Hall, 5
Assistant Professor of Organic and Physical Chemistry

HERBERT M. MORLEY, B.S., M.S. . . . . Talbot Ave.
Instructor in Physics

MELVILLE S. MUNRO, B.S. . . . . 101 Talbot Avenue
Instructor in Electrical Engineering

FRANK E. SEAVEY, A.B. . . . . East, 10
Instructor in English

RICHARD C. SMITH, B.S. . . . . 15 Warren St., W. Medford
Instructor in Structural Engineering

ALEXANDER DILLINGHAM, A.M. . . 10 Dow St., W. Somerville
Instructor in Mathematics

WARD C. PRIEST, A.B. . . . . Dean Hall, 3
Instructor in Physics

HOWARD J. SAVAGE, A.M. . . . . Dean Hall, 1
Instructor in English

CARL L. SVENSEN, B.S. . . . . 46 Hillsdale Road
Instructor in Mechanical Engineering

CONRAD A. ADAMS, B.S. . . . . 101 Talbot Ave.
Instructor in Mechanic Arts

OSCAR MARTIN, M.D. . . . . West, 7
Instructor in Physical Training and Director of the Gymnasium

OTHER OFFICERS

EUGENE E. SHEPARD . . . . . W. Medford
Bursar

FRED W. SEAVEY . . . . . 37 Capen St.
Assistant in the Office of the Dean

FREDERIC A. BRUCE . . . . . 136 Curtis St.
Superintendent of Buildings

COMMITTEE ON PROMOTIONS

Dean Anthony, *Chairman*; Professors Hooper, Durkee, Rockwell, and Stewart.

COMMITTEE ON CURRICULUM

Dean Anthony, *Chairman*; Professors Hooper, Sanborn, Durkee, Rockwell, C. H. Chase, and Earle.

Courses of Instruction

The School offers courses in CIVIL ENGINEERING, STRUCTURAL ENGINEERING, MECHANICAL ENGINEERING, ELECTRICAL ENGINEERING, and CHEMICAL ENGINEERING, each leading to the degree of Bachelor of Science, and requiring four years of study.

While much of the instruction is of a technical character relating to the several branches of engineering, the first aim of the School is toward a broad intellectual development, and an appreciation of the duties of the educated man. An effective correlation of the subjects serves to promote a great degree of unity and to secure an educational result both scientific and cultural.

During the first two years the course of study is prescribed, being the same for all departments, and the only electives permitted are in English and Modern Languages. The importance of developing the power to write clear and concise English is emphasized by correlating this subject with the work of other departments, thus making it as much a fundamental for technical training as it is for a literary education. The required courses in Mathematics, Physics, and Chemistry, common to every field of engineering, are studied during this period, thus preparing the student for the applied subjects which characterize the work of the Junior and Senior years. A thorough course in the theory and practice of Technical Drawing and of Mechanic Arts is required in all departments during the first two years.

One hundred and forty term hours are required for graduation, this being the equivalent of about fifty-two hours of work per week. One term hour signifies one recitation per week for one term, or one laboratory period of three hours for a term, the recitation period implying two hours of preparation. A grade of C or higher must be obtained in at least 70 term hours.

On the pages immediately following the Courses of Instruction will be found an index of the subjects, which gives a complete view of the system of numbering. The figures following the names of subjects represent the credit in term hours.

Following this index will be found detailed descriptions of the subjects in numerical order.

Permission to take a program in excess of eighteen term hours, except when required by the curriculum, must be obtained by petition to the Committee on Promotions.

FRESHMAN YEAR

[Alike for all courses.]

	FIRST TERM			SECOND TERM	
11-1	English	3	11-2	English	3
13-	†French or †German 15 or 22	3	13-	†French or †German 15 or 22	3
21-1	Drawing	5	21-5	Descriptive Geometry	3
29-1	Mathematics	3	25-1	Mechanic Arts	3
29-2	Mathematics	3	29-3	Mathematics	3
	Physical Training	½	31-1	Physics	3
				Physical Training	½
	Total	17½		Total	18½

SOPHOMORE YEAR

[Alike for all courses.]

	FIRST TERM			SECOND TERM	
21-8	Drawing	3	21-13	Mechanism	3
29-4	Mathematics	3	29-5	Mathematics	3
31-2	Physics	3	31-3	Physics	3
31-7	Physical Laboratory	2	31-7	Physical Laboratory	1
35-1	Chemistry	3	35-1	Chemistry	3
41-3	Surveying	1	41-3	Surveying	2
	Physical Training	½		Physical Training	½
	Total	15½		Total	15½
	Electives			*Electives*	
11-	English		11-	English	
13-	French	3	13-	French	3
	German 15 or 22	3		German 15 or 22	3
17-1	Spanish	3	17-1	Spanish	3

†As the course to be pursued in modern language is dependent on the preparation of each student, definite instruction for the selection thereof is given in the description of that department of instruction.

CIVIL ENGINEERING

The Civil Engineering graduates enter a great variety of positions. Their work may include municipal engineering, general surveying, water-supplies, sewerage, water-powers, bridges, mill buildings, fire protection, foundations, electric railroads, steam railroads, highways, or contracts and specifications; and these positions may require drafting, computations, or field construction. It therefore becomes the duty of the Department to qualify its students for various fields of employment. The basis of instruction is general engineering education and not specialization. In fact it is recommended that those students who find that they would like to specialize should plan to do so by a graduate year of study after their four years of general engineering education in the Civil Engineering course.

By referring to the detailed list of studies published on another page of this catalogue, it may be seen, however, that a student can select for his Senior year elective studies and a thesis which will give him opportunity to devote most of the year to his chosen field in railroads, hydraulics, or municipal engineering.

In order that the student may observe a direct application of the theory that he is studying, the Department conducts many laboratory and field courses. These include field practice in topographical and railroad surveying (for which the college location affords excellent advantages), river gaugings, and laboratory tests of metals, cements, road materials, and hydraulic appliances, beside trips of inspection, and tests at near by industrial or municipal plants. This close association of theory and practice adds to the interest and progress of the student.

CIVIL ENGINEERING

JUNIOR YEAR

	First Term			Second Term	
35-2	Qualitative Analysis	2	41-13	Railroad Engineering	3
41-12	Railroad Surveying	3	41-21	Highways	2
41-40	Hydraulics	3	41-43	Hydraulic Measurements	2
45-1	Applied Mechanics	3	45-2	Applied Mechanics	3
45-12	Applied Mechanics Laboratory	1	47-1	Roofs and Bridges	3
51-1	Steam Engine	3	47-3	Structural Design	3
81-2	Economics	3	81-2	Economics	3
	Total	18		Total	19
	Electives			*Electives*	
11-	English		11-	English	
14-	Mathematics		14-	Mathematics	
61-3	Dynamo-Electric Machinery	3	51-3	Thermodynamics	3
64-	Mineralogy				

SENIOR YEAR (First given in 1911–1912)

	First Term			Second Term	
41-14	Railroad Engineering	3	41-48	Sewerage	3
41-46	Water Supplies	3	41-63	Contracts	3
45-3	Structural Mechanics	3	41-99	Thesis	3-5
	Total	9		Total	9-11
	Electives			*Electives*	
11-	English		11-	English	
14-	Mathematics		14-	Mathematics	
17-1	Spanish	3	17-1	Spanish	3
35-18	Chemistry of Road-building Materials	3	35-18	Chemistry of Road-building Materials	3
41-31	Geodesy	2	41-17	Railroad Economics	3
41-47	Water Power Engineering	3	41-51	Fire Protection Engineering	2
41-95	Civil Engineering Topics	2	47-2	Theory of Structures	3
47-4	Structural Design	3	47-9	Bridge Design	2
61-3	Dynamo-Electric Machinery	3	54-	Geology	
64-	Mineralogy		66-	Economics	
66-	Economics				

SENIOR YEAR (1910–1911 only)

	First Term			Second Term	
41-14	Railroad Engineering	3	41-45	Hydraulic Engineering	3
41-46	Water Supplies	3	41-99	Thesis	3-5
45-3	Structural Mechanics	3			
81-2	Economics	3			
	Total	12		Total	6-8
	Electives			*Electives*	
11-	English		11-	English	
14-	Mathematics		14-	Mathematics	
17-1	Spanish	3	17-1	Spanish	3
35-18	Chemistry of Road-building Materials	3	35-18	Chemistry of Road-building Materials	3
41-31	Geodesy	2	24-2	Electricity and Magnetism	3
41-95	Civil Engineering Topics	2	41-17	Railroad Economics	3
47-4	Structural Design	3	41-48	Sewerage	3
61-3	Dynamo-Electric Machinery	3	47-2	Theory of Structures	3
64-	Mineralogy		47-9	Bridge Design	2
			54-	Geology	
			66-	Economics	
			81-2	Economics	3

STRUCTURAL ENGINEERING

The course of instruction in Structural Engineering is arranged so as to afford the student a comprehensive training in the fundamentals of civil engineering construction, and leads to the degree of Bachelor of Science in Civil Engineering. In addition to the subjects of the first two years, the course includes, as prescribed subjects, applied mechanics; testing of the materials of construction; stresses in framed structures; design of masonry and reinforced concrete structures and foundations; the design of buildings and bridges; hydraulics; sanitary engineering; steam engine; railroad surveying and economics. In addition to the prescribed subjects, it is possible for the student to elect courses in English, Spanish, mineralogy, geology, geodesy, contracts, dynamo electric machinery, highways, hydraulic engineering, railroad engineering, and advanced courses in mathematics.

The distinctive work of the course, however, is based upon the principles involved in the theory of structures, and in their design and construction. The study of this subject is commenced at the beginning of the junior year and is carried through two full years without intermission, partly in order to develop the power of concentration by the continued study of a highly mathematical and scientific body of co-ordinated principles, and partly because these same principles happen to be fundamental and therefore necessary for a complete understanding of civil engineering structures.

Special emphasis is laid upon the design by the student of typical structures which are likely to be met in practice. By this means he fixes in mind the principles of mechanics and obtains a truer perspective of their application for stability, safety, and economy of construction. The course is designed as an educational preparation not only for those who expect to follow construction professionally as engineers, but for others who may eventually be connected with public or private works as designers, inspectors or in administrative capacities.

STRUCTURAL ENGINEERING

JUNIOR YEAR

FIRST TERM

35-2	Qualitative Analysis	2
41-12	Railroad Surveying	3
41-40	Hydraulics	3
45-1	Applied Mechanics	3
45-12	Applied Mechanics Laboratory	1
51-1	Steam Engine	3
81-2	Economics	3
	Total	18

Electives

11-	English	
14-	Mathematics	
61-3	Dynamo-Electric Machinery	3

SECOND TERM

41-43	Hydraulic Measurements	2
45-2	Applied Mechanics	3
47-1	Roofs and Bridges	3
47-3	Structural Design	3
81-2	Economics	3
	Total	14

Electives

11-	English	
14-	Mathematics	
24-2	Electricity and Magnetism	3
41-13	Railroad Engineering	3
41-21	Highways	2
51-3	Thermodynamics	3
51-13	Mechanics of Machinery	3

SENIOR YEAR (First given in 1911–1912)

FIRST TERM

41-46	Water Supplies	3
45-3	Structural Mechanics	3
47-4	Structural Design	3
47-95	Structural Topics and Reports	2
	Total	11

Electives

11-	English	
14-	Mathematics	
17-1	Spanish	3
41-14	Railroad Engineering	3
41-31	Geodesy	2
41-47	Water Power Engineering	3
61-3	Dynamo-Electric Machinery	3
64-	Mineralogy	
66-	Economics	

SECOND TERM

47-2	Theory of Structures	3
47-9	Bridge Design	2
47-99	Thesis	3-5
	Total	8-10

Electives

11-	English	
14-	Mathematics	
17-1	Spanish	3
41-17	Railroad Economics	3
41-48	Sewerage	3
41-51	Fire Protection Engineering	2
41-63	Contracts	3
54-	Geology	
66-	Economics	

SENIOR YEAR (1910–1911 only)

FIRST TERM

41-46	Water Supplies	3
45-3	Structural Mechanics	3
47-4	Structural Design	3
81-2	Economics	3
	Total	12

Electives

11-	English	
14-	Mathematics	
17-1	Spanish	3
41-14	Railroad Engineering	3
41-31	Geodesy	2
47-95	Structural Topics and Reports	2
61-3	Dynamo-Electric Machinery	3
64-	Mineralogy	

SECOND TERM

41-45	Hydraulic Engineering	3
47-2	Theory of Structures	3
47-9	Bridge Design	2
47-99	Thesis	3-5
	Total	11-13

Electives

11-	English	
14-	Mathematics	
17-1	Spanish	3
41-17	Railroad Economics	3
41-48	Sewerage	3
54-	Geology	
66-5	Economics	3
66-16	Economics	3
81-2	Economics	3

MECHANICAL ENGINEERING

The course of instruction in mechanical engineering relates particularly to the generation and transmission of power; the design and construction of machinery; the economics of production and labor.

The subject of steam is begun with the Junior year and continued through the Senior year, giving full consideration to the mechanical theory of heat and the properties of steam and gases, based on the preparatory courses in physics and chemistry. It comprises the study of steam engines and boilers, together with their auxiliaries, by text book, laboratory tests, and design. Gas producers, gas engines, and turbines are also given the attention which their importance demands. Both required and elective courses in Electricity are given at the same time, thus giving the student a comprehensive treatment of the power problem.

The subject of mechanism is introduced in the Sophomore year and followed by the mechanics and dynamics of machinery in the Junior and Senior years. These courses are paralleled by laboratory practice and a thorough training in applied mechanics and the testing of materials. The courses in design are closely correlated with the development of theory, and supplemented by shop practice and many inspection trips to the industrial plants in the vicinity,

The third and equally important division of this course is the consideration of problems relating to the manufacture of machinery. This comprises the economic methods of production, and the consideration of labor problems. These subjects will be presented to the prospective engineer in such form as to enable him to comprehend their importance and the principles involved.

The graduate of an engineering school must inevitably lack the mature judgment which can be gained only through the experience of the practicing engineer, but he should have acquired the fundamentals for sound reasoning, precision in expression, and an appreciation of the responsibilities and duties of the professional engineer.

MECHANICAL ENGINEERING

JUNIOR YEAR

	FIRST TERM			SECOND TERM	
25-8	Mechanic Arts	3	41-40	Hydraulics	3
35-2	Qualitative Analysis	2	45-2	Applied Mechanics	3
45-1	Applied Mechanics	3	51-3	Thermodynamics	3
45-12	Applied Mechanics Laboratory	1	51-13	Mechanics of Machinery	3
51-1	Steam Engine	3	51-21	Mechanical Engineering Lab.	2
81-2	Economics	3	81-2	Economics	3
	Total	15		Total	17
	Electives			*Electives*	
11-	English		11-	English	
14-	Mathematics		14-	Mathematics	
61-1	Electrical Laboratory	2	24-2	Electricity and Magnetism	3
61-3	Dynamo-Electric Machinery	3	61-2	Electrical Laboratory	2
			61-5	Alt. Current Machinery	3

SENIOR YEAR (First given in 1911–1912)

	FIRST TERM			SECOND TERM	
51-7	Engine Design	3	51-8	Power Plant Design	3
51-11	Mech. Engineering Problems	2	51-19	Production Engineering	3
51-15	Dynamics of Machinery	3	51-28	Mechanical Engineering Lab.	3
51-17	Machine Design	3	51-99	Thesis	3-5
51-26	Mechanical Engineering Lab.	3	81-	Industrial Engineering	3
	Total	14		Total	15-17
	Electives			*Electives*	
11-	English		11-	English	
14-	Mathematics		14-	Mathematics	
41-47	Water Power Engineering	3	41-51	Fire Protection Engineering	2
45-3	Structural Mechanics	3	41-63	Contracts	3
51-95	Mech. Engineering Topics	2	61-5	Alt. Current Machinery	3
61-3	Dynamo-Electric Machinery	3	66-	Economics	3
61-21	Dynamo Design D. C.	3			
66-	Economics	3			

SENIOR YEAR (1910–1911 only)

21-22A	Machine Design	3	41-45	Hydraulic Engineering	2
51-7	Engine Design	3	51-8	Power Plant Design	3
51-26	Mechanical Engineering Lab.	3	51-23	Mechanical Engineering Lab.	3
81-2	Economics	3	51-99	Thesis	3-5
	Total	12		Total	11-13
	Electives			*Electives*	
11-	English		11-	English	
14-	Mathematics		14-	Mathematics	
41-46	Water Supplies	3	61-6	Alt. Current Machinery	3
45-3	Structural Mechanics	3	66-5	Economics	3
51-11	Mech. Engineering Problems	2	66-16	Economics	3
51-95	Mech. Engineering Topics	2	81-2	Economics	3
61-5	Alt. Current Machinery	3			
61-21	Dynamo Design D. C.	3			

ELECTRICAL ENGINEERING

The aim of this course is to lay a broad foundation of Electrical Science upon which the future technical attainments of the electrical engineer may rest.

The purely electrical work extends throughout the junior and senior years; that in the junior year being devoted to the more elementary theory, and the practice of the simpler tests and measurements, while that in the senior year is largely directed to the more advanced study of alternating currents and electrical machinery and to the more complicated tests of the alternating current and dynamo laboratories, and to the consideration of the general problems of Electrical Engineering.

Throughout the course much attention is paid to the numerical solution of electrical problems, as it is believed that in no other way can theory and principles be so quickly and so clearly comprehended. A considerable amount of time is given to the design of electrical apparatus and machinery and many students during their course construct or assist in the construction of some instrument or piece of electrical machinery of commercial finish and dimensions.

The graduates of this course are advised to spend a couple of years in the apprenticeship courses or testing departments of the large electrical manufacturing companies in order that they may get an intimate practical acquaintance with electrical apparatus and experience in handling and operating heavy machinery.

Everywhere the attempt is made to present the data and methods of Electrical Engineering by the scientific development of physical principles, it being assumed that the empirical side of the profession may best be acquired by practice after graduation.

ELECTRICAL ENGINEERING

JUNIOR YEAR

FIRST TERM			SECOND TERM		
35-2	Qualitative Analysis	2	41-40	Hydraulics	3
45-1	Applied Mechanics	3	45-2	Applied Mechanics	3
45-12	Applied Mechanics Laboratory	1	61-2	Electrical Laboratory	2
51-1	Steam Engine	3	61-5	Alt. Current Machinery	3
61-1	Electrical Laboratory	2	81-2	Economics	3
61-3	Dynamo-Electric Machinery	3			
81-2	Economics	3			
	Total	17		Total	14
	Electives			*Electives*	
11-	English		11-	English	
14-	Mathematics		14-	Mathematics	3
25-8	Mechanic Arts	3	24-2	Electricity and Magnetism	3
			51-3	Thermodynamics	3
			51-13	Mechanics of Machinery	2
			51-21	Mechanical Engineering Lab.	

SENIOR YEAR (First given in 1911–1912)

FIRST TERM			SECOND TERM		
61-7	Dynamo Laboratory	2	61-7	Dynamo Laboratory	2
61-11	Alternating Currents	3	61-16	Electrical Engineering	3
61-15	Electrical Engineering	3	61-95	Electrical Topics	3
61-21	Dynamo Design D. C.	3	61-99	Thesis	3-5
	Total	11		Total	11-13
	Electives			*Electives*	
11-	English		11-	English	
14-	Mathematics		14-	Mathematics	
17-1	Spanish	3	17-1	Spanish	3
25-8	Mechanic Arts	3	41-63	Contracts	3
41-47	Water Power Engineering	3	61-22	Dynamo Design A. C.	3
45-3	Structural Mechanics	3	66-	Economics	
51-17	Machine Design	3			
61-17	Telephone and Telegraph	3			
66-	Economics				

SENIOR YEAR (1910–1911 only)

FIRST TERM			SECOND TERM		
61-5	Alt. Current Machinery	3	41-45	Hydraulic Engineering	3
61-7	Dynamo Laboratory	2	61-6	Alt. Current Machinery	3
61-11	Alternating Currents	3	61-7	Dynamo Laboratory	2
61-21	Dynamo Design D. C.	3	61-99	Thesis	3-5
81-2	Economics	3		Total	11-13
	Total	14		*Electives*	
	Electives		11-	English	
11-	English		14-	Mathematics	
14-	Mathematics		17-1	Spanish	3
17-1	Spanish	3	61-15	Electrical Engineering	3
35-9	Gas Analysis	1	61-22	Dynamo Design A. C.	3
41-46	Water Supplies	3	61-95	Electrical Topics	3
45-3	Structural Mechanics	3	66-5	Economics	3
61-17	Telephone and Telegraph	3	66-16	Economics	3
			81-2	Economics	3

CHEMICAL ENGINEERING

The course in Chemical Engineering covers a period of four years, and leads to the degree of Bachelor of Science in Chemical Engineering.

The subjects in this course have been arranged to give the training in mathematics, physics, chemistry, and mechanical and electrical engineering that will assist the graduates of the department in solving the mechanical, electrical and chemical problems that present themselves when chemistry is applied in practical ways. Subjects intended for general training, the greater part of the pure mathematics, and the less technical engineering subjects have purposely been introduced early in the course. This arrangement allows much time for the study of subjects in chemistry and advanced engineering in the last two years. The mathematical, physical, and general engineering subjects, as well as subjects that are intended for general culture, correspond, for the most part, to those of the course in mechanical and electrical engineering.

In chemistry the subjects are numerous enough to train the student thoroughly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the different branches of chemical analysis, and to make him familiar with many of the practical applications of chemistry. The chemical and engineering subjects are taught, so far as it is possible, in the laboratories, and excursions are made from time to time to plants where technical chemical operations are performed.

Young men who graduate from the course in chemical engineering find employment in constructing and operating plants where chemistry is applied commercially, such as gas-works, dye-works, bleacheries, paper and pulp mills, acid and alkali manufactories.

CHEMICAL ENGINEERING

JUNIOR YEAR

	First Term		Second Term	
35-2	Qualitative Analysis	2		
35-3			Qualitative Analysis	2
35-4	Quantitative Analysis	3	Quantitative Analysis	3
35-10	Organic Chemistry	4	Organic Chemistry	4
41-40			Hydraulics	3
45-1	Applied Mechanics	3		
45-2			Applied Mechanics	3
45-12	Applied Mechanics Laboratory	1		
51-1	Steam Engine	3		
81-2	Economics	3	Economics	3
	Total	19	Total	18
	Electives		*Electives*	
11-	English		English	
14-	Mathematics		Mathematics	
	German 15 or 22	3	German 15 or 22	
24-2			Electricity and Magnetism	3

SENIOR YEAR (First given in 1911–1912)

	First Term		Second Term	
35-5	Quantitative Analysis	3	Quantitative Analysis	3
35-7			Fire Assay	2
35-8			Metallurgy	2
35-9	Gas Analysis	1		
35-11	Theoretical Chemistry	3	Theoretical Chemistry	3
35-17	Applied Chemistry	3	Applied Chemistry	3
61-3	Dynamo-Electric Machinery	3		
35-99			Thesis	3-5
	Total	13	Total	16-18
	Electives		*Electives*	
11-	English		English	
14-	Mathematics		Mathematics	
	German 15 or 22	3	German 15 or 22	
17-1	Spanish	3	Spanish	3
41-46	Water Supplies	3		
41-48			Sewerage	3
54-	Geology		Geology	
64-	Mineralogy			
66-	Economics		Economics	

SENIOR YEAR (1910–1911 only)

	First Term		Second Term	
35-5	Quantitative Analysis	3	Quantitative Analysis	3
35-7			Fire Assay	2
35-8			Metallurgy	2
35-9	Gas Analysis	1		
35-11	Theoretical Chemistry	3	Theoretical Chemistry	3
35-17	Applied Chemistry	3	Applied Chemistry	3
51-1	Steam Engine	3		
35-99			Thesis	3-5
81-2	Economics	3		
	Total	16	Total	16-18
	Electives		*Electives*	
11-	English		English	
14-	Mathematics		Mathematics	
17-1	Spanish	3	Spanish	3
41-46	Water Supplies	3		
41-48			Sewerage	3
45-3	Structural Mechanics	3		
54-	Geology		Geology	
64-	Mineralogy			
66-			Economics	
81-2			Economics	3

TABULAR PROGRAM, FIRST HALF-YEAR

The suffixed *a*, *b*, *c*, *d*, signify divisions

MONDAY

	8:00	8:50	9:50	11:10	12:10	2:10	3:10
SENIOR	21-22*A* 47-4 61-7*a*, *b*	21-22*A* 47-4 61-7*a*, *b*	21-22*A* 47-4 61-7*a*, *b*	35-17 61-5	41-14 51-11 51-95 61-17	35-17 41-46 51-7 61-21	35-17 51-7 61-21
JUNIOR	25-8 35-2*a* 41-12*b*	25-8 35-2*a* 41-12*b*	25-8 35-2*a* 41-12*b*	45-1*a* 51-1*b*	45-1*b* 51-1*a*	35-2*b*	35-2*b*
SOPH	41-3*a*	21-8*b* 41-3*a*	21-8*b* 41-3*a*	11-5 22-3 29-4*b* 29-4*d*	11-13*b* 29-4*a* 29-4*c*	21-8*a*	21-8*a*
FRESH	21-1*a*	21-1*a* 29-1*b*	21-1*a* 29-1*b*	13-1 13-2*b* 22-1	11-1*b* 13-2*a*	21-1*b* 29-1*a*	21-1*b* 29-1*a*

WEDNESDAY

SENIOR	21-22*A* 47-4 61-7*b*, *c*	21-22A 47-4 61-7*b*, *c*	21-22*A* 47-4 61-7*b*, *c*	35-17 61-5	35-11 41-14 51-11 51-95 61-17	41-46 51-7 61-21	 51-7 61-21
JUNIOR	25-8 35-2*a* 41-12*b*	25-8 35-2*a* 41-12*b*	25-8 35-2*a* 41-12*b*	45-1*a* 51-1*b*	45-1*b* 51-1*a*	35-2*b*	35-2*b*
SOPH	31-7*a* 41-3*b*	31-7*a* 41-3*b*	31-7*a* 41-3*b*	11-5 11-13*a* 22-3 29-4*b* 29-4*d*	11-13*b* 29-4*a* 29-4*c*	21-8*b*	21-8*b*
FRESH	21-1*a*	21-1*a* 29-1*b*	21-1*a* 29-1*b*	13-1 13-2*b* 22-1	11-1*c* 13-2*a*	29-1*a*	29-1*a*

FRIDAY

SENIOR	21-22*A* 35-11 47-4 61-7*a*, *c*	21-22*A* 35-11 47-4 61-7*a*, *c*	21-22*A* 35-11 47-4 61-7*a*, *c*	61-5	35-11 41-14 61-17	41-46 51-7 61-21	 51-7 61-21
JUNIOR	25-8 35-10 41-12*b*	25-8 35-10 41-12*b*	25-8 35-10 41-12*b*	45-1*a* 51-1*b*	45-1*b* 51-1*a*	35-2*b*	35-2*b*
SOPH	31-7*a*	21-8*b* 31-7*a*	21-8*b* 31-7*a*	11-5 11-13*a* 22-3 29-4*b* 29-4*d*	 29-4*a* 29-4*c*		
FRESH	21-1*a*	21-1*a* 29-1*b*	21-1*a* 29-1*b*	13-1 13-2*b* 22-1	 13-2*a*	21-1*b* 29-1*a*	21-1*b* 29-1*a*

TABULAR PROGRAM, FIRST HALF-YEAR

The suffixed *a*, *b*, *c*, *d*, signify divisions

TUESDAY

	8:00	8:50	9:50	11:10	12:10	2:10	3:10
SENIOR	35-5 51-26	35-5 41-95 47-95 51-26 61-11	35-5 45-3 51-26	81-2	41-31	35-9 41-31 11-7	35-9 41-31
JUNIOR	35-4 41-12*a* 61-1*a*, *b*	35-4 41-12*a* 45-12*c* 61-1*a*, *b*	35-4 41-12*a* 45-12*c* 61-1*a*, *b*	81-2	35-10 41-40 61-3	45-12*a* 11-7	45-12*a*
SOPH	35-1*b*	21-8*a* 35-1*b*	21-8*a* 35-1*b*	13-3	31-2	11-7	35-1*a*, *b*
FRESH	21-1*b*	21-1*b*	21-1*b* 29-2*a* 29-2*c*	15-2 29-2*b* 29-2*d*	11-1*a*	21-1*a*	21-1*a*

THURSDAY

SENIOR	35-5 51-26	35-5 41-95 47-95 51-26 61-11	35-5 45-3 51-26	81-2	41-31	41-31	41-31
JUNIOR	35-4 41-12*a* 61-1*a*, *c*	35-4 41-12*a* 45-12*d* 61-1*a*, *c*	35-4 41-12*a* 45-12*d* 61-1*a*, *c*	81-2	35-10 41-40 61-3	45-	45-12*b*
SOPH	31-7*b* 35-1*a*	31-7*b* 35-1*a*	31-7*b* 35-1*a*	13-3	31-2		35-1*a*, *b*
FRESH	21-1*b*	21-1*b*	21-1*b* 29-2*a* 29-2*c*	15-2 29-2*b* 29-2*d*	11-1*a*, *b*, *c*	21-1*a*	21-1*a*

SATURDAY

SENIOR	35-5 51-26	35-5 51-26 61-11	35-5 45-3 51-26	81-2			
JUNIOR	35-4 41-12*a* 61-1*b*, *c*	35-4 41-12*a* 61-1*b*, *c*	35-4 41-12*a* 61-1*b*, *c*	81-2	35-10 41-40 61-3		
SOPH	31-7*b*	21-8*a* 31-7*b*	21-8*a* 31-7*b*	13-3	31-2		
FRESH	21-1*b*	21-1*b*	21-1*b* 29-2*a* 29-2*c*	15-2 29-2*b* 29-2*d*			

TABULAR PROGRAM, SECOND HALF-YEAR

The suffixed *a*, *b*, *c*, *d* signify divisions

MONDAY

	8:00	8:50	9:50	11:10	12:10	2:10	3:10
SENIOR				41-48		51-8 61-22	51-8 61-22
	51-23	51-23	51-23 61-15	61-6 35-17	61-95		35-17
JUNIOR	35-3 41-21 61-2*a*, *b*	35-3 41-21 61-2*a*, *b*	35-3 41-21 61-2*a*, *b*	45-2*a* 51-3	41-13 45-2*b*	41-40	61-5
SOPH	31-7*b*	31-7*b*	31-7*b*	11-8 22-3	31-3	21-13*a* 21-13*b*	21-13*a* 21-13*b*
FRESH	25-1*a*	21-5*b* 21-5*c* 25-1*a*	21-*b* 21-5*c* 25-1*a*	13-1 13-2*b* 22-1 29-3*a* 29-3*c*	13-2*a* 29-3*b* 29-3*d*	25-1*a*, *b*, *c*	

WEDNESDAY

SENIOR				41-48	35-11	51-8	51-8
	47-9 51-13	47-9 51-23	47-9 51-23 61-15	61-6 35-17	61-95	61-22	61-22
JUNIOR	35-3 41-43 61-2*a*, *c*	35-3 41-43 61-2*a*, *c*	35-3 41-43 61-2*a*, *c*	45-2*a* 51-3	41-13 45-2*b*	41-40	61-5
SOPH	41-3*a*	41-3*a*	11-4 41-3*a*	11-8 22-3	31-3	21-13*a* 21-13*b*	21-13*a* 21-13*b*
FRESH	25-1*a*	21-5*b* 21-5*c* 25-1*a*	21-5*b* 21-5*c* 25-1*a*	13-1 13-2*b* 22-1 29-3*a* 29-3*c*	13-2*a* 29-3*b* 29-3*d*	25-1*c*	25-1*c*

FRIDAY

SENIOR	35-11 47-9 51-23	35-11 47-9 51-23	35-11 47-9 51-23 61-15	41-48 61-6	35-11 61-95	51-8 61-22	51-8 61-2
JUNIOR	35-10 41-43 61-2*b*, *c*	35-10 41-43 61-2*b*, *c*	35-10 41-43 61-2*b*, *c*	45-2*a* 51-3	41-13 45-2*b*	41-40	61-5
SOPH	41-3*a*	41-3*a*	11-4 41-3*a*	15-3	31-3	21-13*a* 21-13*b*	21-13*a* 21-13*b*
FRESH	25-1*c*	21-5*b* 25-1*c*	21-5*b* 25-1*c*	13-1 13-2*b* 22-1 29-3*a* 26-3*c*	13-2*a* 29-3*b* 29-3*d*	25-1*a*	25-1*a*

TABULAR PROGRAM, SECOND HALF-YEAR

The suffixed *a*, *b*, *c*, *d*, signify divisions

TUESDAY

	8:00	8:50	9:50	11:10	12:10	2:10	3:10
SENIOR	35-5 61-7*a*, *b*	35-5 41-17 61-7*a*, *b*	35-5 47-2 61-7*a*, *b*	81-2	41-45		
JUNIOR	35-4 47-3 51-21	35-4 47-3 51-21	35-4 47-3 51-21	81-2	35-10 47-1 51-13		35-1*a*
SOPH	31-7*a* 35-1*b*	31-7*a* 35-1*b*	31-7*a* 35-1*b*	13-4 29-5*a* 29-5*b*	11-6 29-5*c* 29-5*d*		
FRESH	25-1*c*	21-5*a* 25-1*c*	11-2*b* 21-5*a* 25-1*c*	11-2*a* 15-2	31-1	25-1*b*	25-1*b*

THURSDAY

SENIOR	35-5 61-7*b*, *c*	35-5 41-17 61-7*b*, *c*	35-5 47-2 61-7*b*, *c*	81-2	41-45		
JUNIOR	35-4 47-3 51-21	35-4 47-3 51-21	35-4 47-3 51-21	81-2	35-10 47-1 51-13	41-21	
SOPH	35-1*a* 41-3*b*	35-1*a* 41-3*b*	35-1*a* 41-3*b*	13-4 29-5*a* 29-5*b*	11-6 29-5*c* 29-5*d*		35-1*a*,*b*
FRESH	25-1*b*	21-5*a* 25-1*b*	21-5*a* 25-1*b*	11-2*c* 15-2	31-1		

SATURDAY

SENIOR	35-5 61-7*a*, *c*	35-5 41-17 61-7*a*,*c*	35-5 47-2 61-7*a*, *c*	81-2	41-45		
JUNIOR	35-4 47-3	35-4 47-3	35-4 47-3	81-2	47-1 51-13		
SOPH	41-3*b*	41-3*b*	41-3*b*	13-4 29-5*a* 29-5*b*	11-6 29-5*c* 29-5*d*		
FRESH	25-1*b*	21-5*a* 21-5*c* 25-1*b*	21-5*a* 21-5*c* 25-1*b*	15-2	31-1		

Index to Subjects

No.	Term Hours	Subject
		11 ENGLISH
11-1	3	English (First Term)
11-2	3	English (Second Term)
11-4	2	Narration
11-5	3	General English Literature
11-6	2	English Literature. 19th Century
11-7	2	Advanced English Literature
11-8	2	Technical Exposition
11-9	2	Technical Theses
11-13	3	Argumentation
		13 FRENCH
13-1	*6	French
13-2	*6	French
13-3	3	French
13-4	3	French
13-6	3	French
		15 and 22 GERMAN
22-1	*6	German
15-2	*6	German
22-3	*6	German
		17 SPANISH
17-1	*6	Spanish
		21 DRAWING
21-1	5	Drawing
21-5	3	Descriptive Geometry
21-8	3	Drawing
21-13	3	Mechanism
21-22A	3	Machine Design, Advanced
		25 MECHANIC ARTS
25-1	3	Pattern Making
25-8	3	Metal Work
		29 MATHEMATICS
29-1	3	Computation
29-2	3	Analytical Geometry and Algebra
29-3	3	Elementary Calculus
29-4	3	Intermediate Calculus
29-5	3	Advanced Calculus
		31 PHYSICS
31-1	3	Mechanics and Sound
31-2	3	Electricity and Magnetism, and Light
31-3	3	Mechanics and Heat
31-7	§3	Physical Laboratory
24-2	3	Electricity and Magnetism
		35 CHEMISTRY
35-1	*6	General Inorganic Chemistry
35-2	2	Qualitative Analysis
35-3	2	Qualitative Analysis, Advanced
35-4	*6	Quantitative Analysis
35-5	*6	Quantitative Analysis, Technical
35-7	2	Fire Assay
35-8	2	Metallurgy of Iron and Steel
35-9	1	Technical Gas Analysis
35-10	‖8	Organic Chemistry
35-11	*6	Theoretical Chemistry
35-17	*6	Applied Chemistry
35-18	*6	Chemistry of Road-building Materials
35-99	3-5	Chemical Engineering Thesis
		41 CIVIL ENGINEERING
41-3	†3.	Surveying
41-12	3	Railroad Surveying
41-13	3	Railroad Engineering
41-14	3	Railroad Engineering
41-17	3	Railroad Engineering Economics
41-21	2	Highways and Cements
41-31	2	Geodesy
41-40	3	Hydraulics
41-43	2	Hydraulic Measurements
41-45	3	Hydraulic Engineering
41-46	3	Water Supplies
41-47	3	Water Power Engineering
41-48	3	Sewerage
41-51	2	Fire Protection Engineering
41-63	3	Contracts
41-95	2	Civil Engineering Topics
41-99	3-5	Civil Engineering Thesis
		45 APPLIED MECHANICS
45-1	3	Applied Mechanics
45-2	3	Applied Mechanics
45-3	3	Structural Mechanics
45-12	1	Applied Mechanics Laboratory
		47 STRUCTURAL ENGINEERING
47-1	3	Roofs and Bridges
47-2	3	Theory of Structures
47-3	3	Structural Design, Elementary
47-4	3	Structural Design, Advanced
47-9	2	Bridge Design
47-95	2	Structural Topics and Reports
47-99	3-5	Structural Engineering Thesis
		51 MECHANICAL ENGINEERING
51-1	3	Steam Engine
51-3	3	Thermodynamics
51-7	3	Engine Design
51-8	3	Power Plant Design
51-11	2	Mechanical Engineering Problems
51-13	3	Mechanics of Machinery
51-15	3	Dynamics of Machinery
51-17	3	Machine Design
51-19	3	Production Engineering
51-21	2	Mechanical Engineering Laboratory
51-23	2	Mechanical Engineering Laboratory
51-26	3	Mechanical Engineering Laboratory

*Two terms, three term hours each.
†Two terms; first term, one term hour; second term, two term hours.
‖Two terms; four term hours each.
§Two terms; first term, two term hours; second term, one term hour.

51 Mechanical Engineering (Continued)

51-28	3	Mechanical Engineering Laboratory
51-95	2	Mechanical Engineering Topics
51-99	3-5	Mechanical Engineering Thesis

54 GEOLOGY

54-1	3	Physical Geology and Geography
54-2	3	General and Economic Geology
54-3	*6	Mathematical Problems in Geology
54-4	3	Field Geology

61 ELECTRICAL ENGINEERING

61-1	2	Electrical Laboratory
61-2	2	Electrical Laboratory
61-3	3	Dynamo-Electric Machinery
61-5	3	Alternating Current Machinery
61-6	3	Alternating Current Machinery
61-7	‡4	Dynamo Laboratory
61-11	3	Alternating Currents
61-15	3	Electrical Engineering
61-16	3	Electrical Engineering
61-17	3	Telephone and Telegraph
61-21	3	Dynamo Design, D. C.
61-22	3	Dynamo Design, A. C.
61-95	3	Electrical Topics
61-99	3-5	Electrical Engineering Thesis

64 MINERALOGY

64-1	3	Mineralogy and Lithology
64-2	3	Crystallography and Descriptive Mineralogy

81 POLITICAL ECONOMY

81-2	6	Elements of Economics
66-5	3	Money, Credit, and Banking
66-16	3	Modern Labor Problems

*Two terms, three term hours each.
‡Two terms, two term hours each.

Examination Group System

The courses are divided into seven groups. Each of these groups has assigned to i three periods of four days each for each half year, during which periods all announced examinations in the courses of that group are given. These examinations are limited to the time assigned to these subjects on the program.

Composition of groups and periods allotted to each are as follows:

FIRST HALF-YEAR

Subject	Group	Subject	Group	Subject	Group	Subject	Group
11-1	5	25-8	4	35-18		51-7	7
11-5	3	29-1	1	41-3	5	51-11	4
11-7	3	29-2	2	41-12	4	51-26	5
11-9		29-4	2	41-14	5	51-95	3
11-13	5	31-2	7	41-31	4	61-1	4
13-1	3	31-7	3	41-40	5	61-3	5
13-2	7	35-1	1	41-46	7	61-5	2
13-3	3	35-2	7	41-95	3	61-7	5
15-2	6	35-4	1	45-1	1	61-11	7
21-1	6	35-5	1	45-3	1	61-17	2
21-8	4	35-9	4	45-12	3	61-21	4
21-22A	3	35-10	5	47-4	2	81-2	6
22-1	6	35-11	5	47-95	3		
22-3	6	35-17	3	51-1	2		

Group 1.	Oct. 4, 5, 6, 7.	Nov, 7, 8, 9, 10.	Dec. 14, 15, 16, 17.
" 2.	Oct. 8, 10, 11, 13.	Nov. 11, 12, 14, 15.	Dec. 19, 20, Jan. 4, 5.
" 3.	Oct. 14, 15, 17, 18.	Nov. 16, 17, 18, 19.	Jan. 6, 7, 9, 10.
" 4.	Oct. 19, 20, 21, 22.	Nov. 21, 22, 28, 29.	Jan. 11, 12, 13, 14.
" 5.	Oct. 24, 25, 26, 27.	Nov. 30, Dec. 1, 2, 3.	Jan. 16, 17, 18, 19.
" 6.	Oct. 28, 29, 31, Nov. 1.	Dec. 5, 6, 7, 8.	Jan. 20, 21, 23, 24.
" 7.	Nov. 2, 3, 4, 5.	Dec. 9, 10, 12, 13.	Jan. 25, 26, 27.

Final Examinations January 28, 30, 31, February 1st.

SECOND HALF-YEAR

Subject	Group	Subject	Group	Subject	Group	Subject	Group
11-2	5	29-5	2	41-13	4	51-13	5
11-4	5	31-1	1	41-17	5	51-21	3
11-6	3	31-3	7	41-21	3	51-23	5
11-8	3	31-7	3	41-40	7	61-2	4
13-1	3	35-1	1	41-43	5	61-5	2
13-2	7	35-3	7	41-45	1	61-6	2
13-4	3	35-4	1	41-48	4	61-7	5
15-2	6	35-5	1	45-2	1	61-15	4
21-5	4	35-7	7	47-1	7	61-22	7
21-13	6	35-8	4	47-2	7	61-95	3
22-1	6	35-10	5	47-3	2	81-2	6
22-3	6	35-11	5	47-9	3		
25-1	6	35-17	3	51-3	4		
29-3	2	41-3	5	51-8	7		

Group 1.	Feb. 21, 23, 24, 25.	Mar. 27, 28, 29, 30.	May 9, 10, 11, 12.
" 2.	Feb. 27, 28, Mar. 1, 2.	Mar. 31. Apr. 1, 3, 4.	May 13, 15, 16, 17.
" 3.	Mar. 3, 4, 6, 7.	Apr. 5, 6, 7, 8.	May 18, 19, 20, 22.
" 4.	Mar. 8, 9, 10, 11.	Apr. 10, 11, 12, 24.	May 23, 24, 25, 26.
" 5.	Mar. 13, 14, 15, 16.	Apr. 25, 26, 27, 28.	May 27, 29, 31, June 1
" 6.	Mar. 17, 18, 20, 21.	Apr. 29, May 1, 2, 3.	June 2, 3, 5, 6.
" 7.	Mar. 22, 23, 24, 25.	May 4, 5, 6, 8.	June 7, 8, 9, 10.

Final examinations, June 12, 13, 14, 15.

Departments of Instruction

11 ENGLISH

The aim of the department of English is, first, to teach the student to think accurately and to give adequate written and spoken expression to his own experience; second, to broaden his outlook.

In addition to the class work, papers in other subjects will also be examined by the instructors in English, as a test of the student's ability to express himself correctly and clearly; and theses, as far as possible, will be subject to criticism by the instructors in English before they are finally accepted by the department for which they are written.

English Subjects are Open for Election as Follows:

	First Term	*Second Term*
Sophomore year	11-13 11-5	11-4 11-6 11-8
	11-7 (with permission of instructors)	
Junior year	11-13 11-5	11-4 11-6 11-8
	11-7	11-9 (must be preceded by 11-8)
	11-9 (must be preceded by 11-8)	
Senior year	11-13 11-5 11-7 11-9	11-4 11-6 11-8 11-9

11-1 English. A study of the elemental forms of literary and scientific writing: description, exposition, directions, criticism, argument, and narration, with the ultimate aim of helping the student to think for himself. Reading of illustrative literature. *Three periods a week: one lecture, one recitation, and one ten-minute conference.*

First term. Three term hours.

MR. SEAVEY, PROFESSOR EARLE and MR. SAVAGE

11-2 English. A study of actual problems in literary expression. Reading in general science and literature under the guidance of weekly lectures. *Three periods a week: one lecture, one recitation, and one ten-minute conference. Preparation, 11-1.*

Second term. Three term hours.

MR. SEAVEY, PROFESSOR EARLE and MR. SAVAGE

11-4 **English.** An advanced subject in general composition, including the writing of daily themes and short stories. *Three periods a week: two recitations, and one ten-minute conference. Preparation, 11-2.*

Second term. Two term hours. MR. SAVAGE

11-5 **English.** A brief survey of English literature and history, from the beginnings to about 1750, aiming to broaden the student's appreciation of what he may get from books, and to suggest ways in which the past throws light on the problems of the present. *Four periods a week: three lectures and one ten-minute conference. Preparation, 11-2.*

First term. Three term hours. PROFESSOR EARLE and MR. SEAVEY

11-6 **English.** A study of some of the most important literary and scientific developments of the nineteenth century. *Four periods a week: three lectures and one ten-minute conference. Preparation, 11-2.*

Second term. Two term hours. PROFESSOR EARLE and MR. SEAVEY

11-7 **English.** Advanced English literature. A study of some author, period, or type. The definite work to be carried on will be outlined by the instructor in charge each June for the following term. *Two periods a week: one recitation and one thirty-minute conference. Preparation, 11-6.*

First term. Two term hours. MR. SAVAGE

11-8 **English.** A detailed study of the most important problems of technical writing. *Four periods a week: two recitations and two ten-minute conferences. Preparation, 11-2.*

Second term. Two term hours. MR. SAVAGE and MR. SEAVEY

11-9 **English.** An advanced subject in technical composition. No class meetings; each student writes papers from ten to fifty pages in length under the individual direction of the instructor. The subjects are taken, as far as possible, from technical work previously done by the student outside of college, or from special research. *One thirty-minute conference a week. Preparation, 11-8.*

First term; repeated in second term. Two term hours.

PROFESSOR EARLE, MR. SAVAGE and MR. SEAVEY

11-13 **English.** Argumentative composition adapted to meet the special needs of engineers. *Three periods a week: two recitations and one ten-minute conference. Preparation, 11-2.*

First term. Three term hours. MR. SAVAGE

MODERN LANGUAGES

Students who have fulfilled the entrance requirement in foreign language are required to pursue in the Freshman year a course in a modern language under the following conditions:

Those receiving credit in an ancient language only will enter

French 13-1, and will be required to take French 13-2 in the Sophomore year.

Those receiving elementary credit in French or German only will continue that language during the Freshman year.

Those receiving credit for Intermediate French or German only may continue the language offered for one year, or begin the other, but in the latter case they will be required to continue it during the Sophomore year.

Those receiving elementary credit in both French and German may continue either language during the Freshman year.

Those receiving intermediate credit in one language, and elementary credit in the other, may continue either for one year. They are recommended to select that in which elementary credit only is received. Those who receive intermediate credit in French, and elementary credit in German, may, with the consent of the department, take Spanish in the Freshman year.

Those receiving elementary and intermediate credit in both languages may take either for one year, or each for a half-year; or Spanish, with the consent of the department.

Extra Credit. *Any student receiving credits in language not needed for entrance, to the extent of one unit, may apply, not later than the end of the Sophomore year, for an additional credit toward his degree of three term hours, which will be granted if his work has been satisfactory to the department.

*Any student receiving credits in language not needed for entrance, to the extent of three units (or two, consisting of Intermediate French and Intermediate German), may apply, not later than the end of the Sophomore year, for an additional credit toward his degree of six term hours, which will be granted if his work has been satisfactory to the department. These students may be excused from language work at mid-year, when in the judgment of the promotions committee the adjustment of their program makes it desirable; they will then receive

* Principals and prospective students are informed that college credit for work done in the secondary school is given only upon examination, or after the student has satisfactorily continued the subject in College.

three hours credit for the work of the first term, and six hours additional credit.

Any student receiving credits in language not needed for entrance, to the extent of four units, including one intermediate modern language, may apply, not later than the end of the Sophomore year, for an additional credit toward his degree of nine term hours, which will be granted if his work has been satisfactory to the department. These students may be excused from language at mid-year, when in the judgment of the promotions committee the adjustment of their program makes it desirable; they will then receive three hours credit for the work of the first term, and nine hours additional credit.

But in no case shall a student count more than eighteen term hours in foreign language towards his degree.

Any student of other national language than English who may be a candidate for admission, and who is able to speak French, German, Spanish, Italian, or Portuguese, will be given credit for this ability as an equivalent for the entrance requirement in Modern Language.

He may also offer it as a substitute for the regular modern language requirement for the degree of S.B. in Engineering, under the following conditions:

(1) That he shall have attained the ability to express himself fluently, and with a sufficient degree of accuracy, in English; that he shall have passed the required subjects in English, and one elective in English composition.

(2) That he shall have passed a special examination in the language for which he is to receive credit.

13 FRENCH

The aim of the work in French is the acquisition of a knowledge of the language not only for its educational value in general but for its bearing on the student's mother tongue. The scientific reading is chosen, as far as possible, for its direct application to technical subjects which are being studied at the same time. Care and accuracy in translation are emphasized. Although no extensive attempt is made to give the student a

ready speaking knowledge of the language, he is trained to understand it when spoken. Careful attention is paid to pronunciation, and to the acquisition of a vocabulary of every-day expressions and idioms which will enable him, in case of foreign residence, to acquire rapidly a correct and fluent command of the spoken tongue. Students are encouraged to do outside reading for their own pleasure, in addition to the class-room requirements. The college Library contains a large assortment of representative works suited for this purpose.

13-1 **French.** Elementary course. The essentials of grammar, with composition; Grandgent's Grammar; a French Reader; reading of short works of modern authors in prose and verse. Open to Freshmen whose entrance language is Latin, Greek, or Advanced German. It must be followed by 13-2 in the Sophomore year. *First term, five recitations a week; second term, four recitations a week.*

First and second terms. Six term hours. MR. WHEELER

13-2 **French.** Reading of modern fiction, and scientific works related to the technical and scientific studies of the Freshman year. Review of grammatical principles; vocabulary practice. *Three recitations a week. Preparation, elementary entrance credit in French, or 13-1.*

First and second terms. Six term hours.

MR. WHEELER and MR. GREENE

13-3 **French.** Selected works of the nineteenth century; scientific reading; composition; conversation. *Three recitations a week. Preparation, advanced entrance credit in French, or 13-2.*

First term. Three term hours. PROFESSOR HAYDEN

13-4 **French.** Reading of selected types of French literature; composition; conversation. *Three recitations a week. Preparation, 13-2 or its equivalent.*

Second term. Three term hours. PROFESSOR HAYDEN

13-6 **French.** Advanced reading of historical, critical, and dramatic works. *Three recitations a week. Preparation, 13-3 or its equivalent.*

Second term. Three term hours. PROFESSOR HAYDEN

(13-6 French will not be given unless a reasonable number of thoroughly qualified students elect it.)

15 and 22 GERMAN

The aim and scope of the work in German are in general the same as in French, and the student is referred to the statement of that department.

22-1 German. Elementary course. The essentials of grammar; reading of modern prose; dictation and composition. Open to Freshmen who have received credit in Advanced French for admission. It must be followed by 15-2 in the Sophomore year. *Three recitations a week.*

First and second terms. Six term hours. ASSISTANT PROFESSOR REED

15-2 German. Review of grammatical principles, especially with reference to syntax. Reading of modern works, including one work dealing with a scientific subject. Dictation and composition. *Three recitations a week. Preparation 22-1 or Elementary German for admission.*

First and second terms. Six term hours. ASSISTANT PROFESSOR REED

22-3 German. (First term.) The rapid reading of modern prose in contemporary authors. (Second term.) Introduction to the classic authors: Lessing, Minna von Barnhelm; Schiller, Die Jungfrau von Orleans; Goethe, Hermann and Dorothea. *Three recitations a week. Preparation, 15-2, or Advanced German for admission. Six term hours. Either half of the subject may be taken, counting as three term hours.*

PROFESSOR FAY

17 SPANISH

The aim of the single subject offered in Spanish is to enable the student to read without serious difficulty ordinary Spanish prose. Due attention is paid to the essentials of grammar as a means to this end, and to pronunciation. Simple English sentences are translated into Spanish. The importance of French as a preparation for this subject is emphasized.

17-1 Spanish. Elementary course. The essentials of grammar; reading of modern prose; practice in writing Spanish. Open to those who have received a grade of C or higher in French 13-2, 13-3 or 13-4. All others wishing to elect the subject should consult the instructor. *Three recitations a week.*

First and second terms. Six term hours. ASSISTANT PROFESSOR REED

21 DRAWING

The department of Drawing aims to give a broad and exact training in the language of graphics; to teach the principles of its construction, its technique, and the art of expression by this medium. It is designed to give the student such practice as shall enable him to use this language with fluency whenever and wherever it may serve better than a written or spoken language.

The work of the department also includes practice in the use of graphics for the solution of problems relating to the theory of mechanism and its application to machine design.

21-1 **Drawing.** The course in Freshman Drawing comprises exercises in the proper use and care of drafting tools; numerous problems in geometrical construction; a thorough study of the principles of orthographic projection, freehand and mechanical perspective, isometric solids. Considerable time is devoted to the freehand sketching of simple parts of machinery and the careful completion of drawings from these sketches. Throughout the course special attention is given to lettering and the composition of titles. *First term, three periods a week of three hours each, and two periods a week of two hours each.*

First term. Five term hours.

ASSISTANT PROFESSOR ASHLEY and MR. CARROLL

21-5 **Descriptive Geometry.** A course comprising the study of principles and their applications, by the solution of a large number of graded problems in which theory and practice are correlated. *Three periods a week; two hours each.*

Second term. Three term hours.

ASSISTANT PROFESSOR ASHLEY and MR. CARROLL

21-8 **Drawing.** A study of the technique of graphic expression and its application in giving complete and accurate information to the constructor. Detailed and assembly drawings are made from freehand sketches and other data, but nothing in the nature of a copy is permitted. The work is conducted according to the methods of progressive draftsmen, the greatest emphasis being laid on completeness and accuracy in the use of graphic language. *Three periods a week; two hours each. Preparation, 21-1.*

First term. Three term hours. MR. SVENSEN

21-13 **Mechanism.** An introductory course, conducted mainly by graphical methods, and dealing with the fundamental laws governing the velocity ratio and paths of mechanical movements and their application to velocity diagrams, simple types of gearing, and other modes of transmission. *Three periods a week; two hours each. Preparation, 21-1. Simultaneous with 31-3.*

Second term. Three term hours.

PROFESSOR ANTHONY, ASSISTANT PROFESSOR ASHLEY and MR. CARROLL

21-22A **Machine Design.** Advanced course in design for the M.E. Seniors of 1910–1911 only. *Preparation, 21-21.*

Three periods a week; three hours each.

First term. Three term hours.

PROFESSORS ANTHONY and C. H. CHASE

25 MECHANIC ARTS

Work in the shops is designed to give a practical knowledge of mechanical processes and of the materials of construction. By means of lectures, practical illustrations, actual work in the shops and visits to manufacturing plants the student comes in contact with the most approved methods and processes in engineering practice. In the shops a series of graded exercises is given, having in view the formation of habits of precision and the development of judgment essential to the engineer.

During the Senior year the knowledge of shop methods already gained is put to actual test in the development of Shop Problems which are carried on under "Production Engineering." The student investigates shop conditions in certain plants as to economical and practical methods of production. It is intended that work in the shop shall always maintain a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shop, from drawings prepared in the drafting-room.

25-1 **Pattern Making.** Practice is given in the use of bench woodworking tools and the wood-turning lathe for the construction of simple patterns from working drawings. A set of graded exercises leads from simple to the more complicated patterns and core boxes. The methods and principles of foundry practice are introduced in the early part of the course. Much time is spent in the study of working drawings to develop the student's ability to apply the best pattern making and foundry practice, and to understand their relation to shop and drafting room. Visits are made to the shops of large manufacturing plants. *Three periods per week; two three-hour, one two-hour, and one lecture.*

Second term. Three term hours.

ASSISTANT PROFESSOR STEWART and MR. ADAMS

25-8 **Metal Work.** This course is introduced by work at the forge in bending, drawing, upsetting, welding, tool-dressing, etc., followed by work at the vice in chipping, filing, and fitting. Lathe work, including straight and taper turning, chucking, boring, reaming, and thread cutting; also drilling, planing, shaper and milling-machine work. *Three periods per week; three hours each.*

First term. Three term hours.

ASSISTANT PROFESSOR STEWART and MR. ADAMS

29 MATHEMATICS

The instruction in mathematics is arranged so that fundamental principles of trigonometry, analytics, and calculus may come as early as possible in the course, the more advanced parts of each subject being introduced later. A review of algebra runs through the first year in appropriate connection with topics in the other subjects. The prescribed work continues to the end of the Sophomore year, double time being given to mathematics in the first term of the Freshman year. Seniors and Juniors may elect higher courses in the College of Letters.

29-1 **Computation.** Plane Trigonometry: right and oblique triangles, vectors, identities, and equations. Use of logarithms and the slide rule. *Three periods a week; two hours each. Simultaneous with 29-2.*
First term. Three term hours.

PROFESSOR RANSOM and MR. DILLINGHAM

29-2 **Analytical Geometry and Algebra.** Graphical representation; review of simultaneous equations and quadratics; variation. The straight line and circle; conic sections; locus problems; space co-ordinates. *Three hours a week. Simultaneous with 29-1.*
First term. Three term hours.

PROFESSOR RANSOM and MR. DILLINGHAM

29-3 **Elementary Calculus.** Differentiation and integration of algebraic functions; problems in tangents, rates, maxima and minima, areas, etc.; logarithmic and trigonometric functions. *Three hours a week. Preparation, 29-1 and 29-2.*
Second term. Three term hours.

PROFESSOR RANSOM and MR. DILLINGHAM

29-4 **Intermediate Calculus.** Review of trigonometric identities and equations, and of differentiation and integration. Expansions, approximations and errors by Taylor's Theorem. Integration as summation. *Three hours a week. Preparation, 29-3.*
First term. Three term hours.

PROFESSOR RANSOM and MR. DILLINGHAM

29-5 **Advanced Calculus.** Multiple integration; applications in mechanics and physics; spherical trigonometry; introduction to differential equations. *Three hours a week. Preparation, 29-4.*
Second term. Three term hours.

PROFESSOR RANSOM and MR. DILLINGHAM

31 PHYSICS

This science is presented, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, from which all the various phenomena are deducible. In each branch there are frequent returns to these first principles.

In the laboratory, students are given a syllabus of the work for a guide. This syllabus is supplemented by Glazebrook's Physical Optics; Kaulrausch's Measurements; Stewart and Gee's Practical Physics, vols. 1 and 2; Glazebrook and Shaw's Practical Physics; Nichol's Laboratory Manual, vols. 1 and 2; and Watson's Practical Physics. In addition to the experimental and note-book work, many problems are solved.

31-1 **Mechanics and Sound.** This is introductory to all other subjects offered by the department. *Three periods a week, lectures and recitations. Second term. Three term hours.*

PROFESSOR H. G. CHASE, MR. MORLEY and MR. PRIEST

31-2 **Electricity and Magnetism, and Light.** *Three periods a week, lectures and recitations. Preparation, 31-1. First term. Three term hours.*

PROFESSOR H. G. CHASE, MR. MORLEY and MR. PRIEST

31-3 **Mechanics and Heat.** *Three periods a week. Preparation, 31-2 Second term. Three term hours.*

PROFESSOR H. G. CHASE and MR. MORLEY

31-7 **Physical Laboratory.** *First term, two periods a week; three hours each. Second term, one three-hour period. First and second terms. Three term hours.*

MR. MORLEY and MR. PRIEST

35 CHEMISTRY

35-1 **General Inorganic Chemistry.** An introductory course in theoretical and descriptive inorganic chemistry, with a thorough consideration of the simplest carbon compounds and principal technical processes. *Three periods a week, two lectures, one three hour laboratory period with conferences. First and second terms. Six term hours.*

PROFESSOR DURKEE, ASSISTANT PROFESSOR COBB, DR. MUELLER and ASSISTANT

35-2 **Qualitative Analysis** for the detection of the metals, a course which includes the experimental development of schemes for the division

of the metals into groups, the separation and detection of the metals in each group, — a study of all the chemical changes and analytical details, together with the correct analysis of six known solutions and thirteen unknown. *Two periods a week; three hours each; laboratory work and conference. Six lectures.*

First term. Two term hours.

PROFESSOR DURKEE, DR. MUELLER and ASSISTANT

35-3 **Qualitative Analysis, Advanced,** dealing with methods to effect solution of solids, the detection of mineral and common organic acids, the complete analysis of inorganic solids, including mixtures of salts, minerals, alloys, and slags. Three known and thirteen unknown are required, and thorough study of the chemical changes and conditions involved in the analyses. *Two periods a week; three hours each; laboratory work and conference.*

Second term. Two term hours. DR. MUELLER

35-4 **Quantitative Analysis.** Theory and practice of gravimetric and volumetric analysis, including the determination of chlorine by the ordinary and Gooch crucible methods, iron and sulphur in furous ammonium sulphate, silica in a silicate, phosphorus in a phosphate, complete analysis of dolomite, and brass, preparation of strictly half-normal sodium hydroxide and hydrochloric acid solutions, the volumetric analyses of soda ash and oxalic acid, the analysis of iron ore by the dichromate and permanganate methods, determination of chromium in chromite, of antimony by the iodine method, and silver by the sulphocyanate method. *Three periods a week; three hours each; laboratory work and conference.*

First and second terms. Six term hours. PROFESSOR DURKEE

35-5 **Quantitative Analysis.** Technical. Work varied somewhat to meet the needs of individual students. Course ordinarily comprises proximate analysis of coal, nitrogen in coal, by Kjeldahl's method, complete analysis of boiler scale, mineral and sanitary analysis of water, determination of copper in ores by iodine and cyanide methods, of zinc by ferro-cyanide method, complete analysis of Babbitt metal, determination of lead in ores, and manganese, sulphur, phosphorus, silicon and carbon in iron and steel. *Three periods a week; three hours each; laboratory work and conference.*

First and second terms. Six term hours. PROFESSOR DURKEE

35-7 **Fire Assay.** A course which deals with the theory and practice of sampling and assaying gold and silver ores. *Two periods a week; three hours each; laboratory work and conference.*

Second term. Two term hours. PROFESSOR DURKEE

35-8 **Metallurgy of Iron and Steel.** Considered largely from the chemical side, and includes the study of ores, fluxes, fuels, furnaces, and the other mechanical devices used in the commercial production of pig iron,

wrought iron, and steel, together with the solution theory of iron and steel, heat treatment of steel, and production of malleable cast iron. *Two periods a week; one hour each; lectures and recitations.*

Second term. Two term hours. PROFESSOR DURKEE

35-9 **Technical Gas Analysis,** by the Orsat, Elliot, and Hempel systems. *One period a week, of three hours.*

First term. One term hour. PROFESSOR DURKEE and ASSISTANT

35-10 **Organic Chemistry.** This course consists of lectures, recitations, and laboratory work. It is intended to familiarize the student with the typical compounds of carbon and their more important derivatives. The work in the laboratory includes the preparation of certain of the more important substances referred to in the lectures; the identification of certain classes of compounds; and organic analysis. *Four periods a week; three lectures; one three-hour laboratory period.*

First and second terms. Eight term hours.

ASSISTANT PROFESSOR COBB

35-11 **Theoretical Chemistry.** The subject matter of this course consists largely of the principles usually included under the head of Physical Chemistry. The work in the laboratory consists of physical chemical measurements and experiments of a physical chemical nature. *Three periods a week, two lectures, one three-hour laboratory period.*

First and second terms. Six term hours. ASSISTANT PROFESSOR COBB

35-17 **Applied Chemistry.** A course dealing with the most important applications of inorganic and organic chemistry to manufacturing purposes, such as the production of sulphuric acid, soda, illuminating gas, and sugar. *Three periods a week. Two lectures or recitations, and one three-hour laboratory period.*

First and second terms. Six term hours. PROFESSOR DURKEE

35-18 **Chemistry of Road-building Materials.** The origin, production, refining, and chemical analysis of tars, asphalts, petroleum and coal tar oils, Portland and other cements. The course is designed for advanced students in highway engineering, and should fit them for efficient service in cement laboratories and cement plants, and for analyzing and controlling the properties of the mixtures of bituminous materials now so widely applied to road surfaces. *Two three-hour laboratory periods and one recitation per week. Preparation, 41-21, 35-1, and 35-2.*

First and second term. Six term hours. PROFESSOR DURKEE

35-99 **Chemical Engineering Thesis.** The development of a Chemical Engineering problem by extended personal research.

Second term. Three to five term hours.

PROFESSOR DURKEE and ASSISTANT PROFESSOR COBB

41 CIVIL ENGINEERING

*41-3 **Surveying.** In this course each student obtains field practice with transit, level and plane table; also, an office drill in plotting and in surveying computations. The problems that are selected for both field and office are intended to illustrate general surveying principles and are considered to be well adapted to the needs of engineers in all courses. They include surveying problems that are incident to building construction and the installation of machinery, as well as problems that occur in ordinary surveys for topography and for area. Text-books principally used; Plane Surveying, by Tracey, and Topographical Drawing, by Daniels. *One three-hour period a week, first term; two three-hour periods a week, second term. Preparation, 29-1.*

First and second terms. Total, three term hours.

ASSISTANT PROFESSOR TUCKER

41-12 **Railroad Surveying.** The reconnoissance and preliminary survey of a proposed line of railroad; determination and location of curves that would be required; plotting of survey notes; computation of curves; estimates of materials for construction; completion of all drawings; final report on the advisability of the proposed line. Text books: Field Engineering, by Searles; Railroad Location, Surveys and Estimates, by Lavis. *Three periods a week; three hours each. Preparation, 41-3.*

First term. Three term hours. MR. CONNER

41-13 **Railroad Engineering.** A comprehensive treatment of railroad curves and spirals; the study of trestles, culverts, tunnels, track elevation, repair shops, and miscellaneous railroad structures. *Three periods a week; one hour each. Preparation, 41-12.*

Second term. Three term hours. MR. CONNER

41-14 **Railroad Engineering.** A recitation course comprising the study of track materials and track work, frogs and switches, yard and terminal layouts, signaling and interlocking, equipment and tools, and general railroad maintenance. The student is required to lay out and design a proposed siding. *Three periods a week; one hour each. Preparation, 41-13.*

First term. Three term hours. MR. CONNER

41-17 **Railroad Engineering Economics.** Lectures and recitations on the economic principles of railroad location and operation; discussions on grade and alignment revisions, double-tracking and general improvements. *Three periods a week; one hour each. Preparation, 41-14.*

Second term. Three term hours. MR. CONNER

41-21 **Highways and Cements.** The construction of modern paved streets; problems of road maintenance; tests of wearing and cementing

*Course 41-3 is offered as a Summer Course in Surveying of three weeks in length, to be given at the College June 19, 1911.

qualities of trap rocks: abrasion test of paving brick; standard tests of Portland cements; proportioning of concrete; road-building properties of asphaltic oils, and other bituminous materials, their examination and application in recent practice. *One recitation and one three-hour laboratory period per week.*

Second term. Two term hours. ASSISTANT PROFESSOR TUCKER

41-31 **Geodesy.** The determination of a true meridian by star and solar observations, accurate measurement of a base line, of angles in a triangulation system, and the adjustment of observations by the method of least squares. *Two periods a week; three hours each. Preparation, 41-3.*

First term. Two term hours. MR. CONNER

41-40 **Hydraulics.** Theoretical and Applied, including the laws that relate to the pressure and flow of water in pipes, the discharge through weirs, tubes, and canals, together with a treatment of the elementary principles of water turbines. Text book: A Treatise on Hydraulics, by Merriman. *Three periods a week; one hour each.*

First term; repeated in second term. Three term hours.

PROFESSOR SANBORN

41-43 **Hydraulic Measurements.** Experiments on contracted and submerged weirs, standard nozzles, proportional water meter, impulse water wheel, duplex pump, and centrifugal pump; river and canal gaugings by rod floats, and current meter. Text book: A treatise on Hydraulics, by Merriman. *Two periods a week; three hours each. Preparation, 41-40.*

Second term. Two term hours. PROFESSOR SANBORN

41-45 **Hydraulic Engineering.** A course dealing with water-shed areas, canals, penstocks, water-powers, wheels, and turbines. *Three recitations a week.*

Second term. Three term hours. PROFESSOR SANBORN

41-46 **Water Supplies.** The examination of water supplies, quality of water, communicable diseases, purification of water, water supplies, reservoirs, dams, pumping machinery. Textbook; Public Water Supplies by Turneaure and Russell. *Three periods a week; one hour each. Preparation, 41-40.*

First term. Three term hours. PROFESSOR SANBORN

41-47 **Water Power Engineering.** Water shed areas, stream flow, hydraulics of water wheels and turbines, turbine testing, selection of turbine for given conditions, water-power development and value of privileges. Text book: Water Power Engineering, by Mead. *Three periods a week; one hour each. Preparation, 41-40.*

First term. Three term hours. PROFESSOR SANBORN

41-48 **Sewerage.** Purification of sewage, the design of a sewerage system, forms of construction, modern methods of sewage and garbage

disposal. *Three periods a week; one hour each. Preparation, 41-44.*

Second term. Three term hours. ASSISTANT PROFESSOR TUCKER

41-51 **Fire Protection Engineering.** Fire streams, fire pumps, meters, pipe systems, including automatic sprinklers, watchman service, public fire departments, fire causes, and fire proof and slow burning construction. Text book: Fire Protection, by Crosby and Fiske. *Two periods a week; two hours each. Preparation, 41-40.*

Second term. Two term hours. Omitted in 1910-1911.

PROFESSOR SANBORN

41-63 **Contracts.** The essential elements of all contracts, their formation and modes of discharge, the fundamental principles of successful writing and interpretation of contracts for the erection of engineering works, are carefully considered. Commercial contracts are also studied, including contracts of association, of sale, of transportation, and instruments of credit. The duties and legal responsibilities of the engineer as agent, business man, or independent contractor are emphasized, and some practice is had in writing engineering contracts and specifications. *Three periods a week; one hour each.* ASSISTANT PROFESSOR TUCKER

Second term. Three term hours. Omitted in 1910-1911.

41-95 **Civil Engineering Topics.** Presentation and discussion of engineering topics. Text book: Proceedings of the American Society of Civil Engineers for 1910. *Two periods a week; one hour each. Preparation, Junior Civil Engineering courses.*

First term. Two term hours. PROFESSOR SANBORN

41-99 **Civil Engineering Thesis.** A single topic is developed by extended research, design, or experimentation.

Second term. Three to five term hours. PROFESSOR SANBORN

45 APPLIED MECHANICS

45-1 **Applied Mechanics.** This is a consideration of the principles of the strength of materials, relating to beams, columns and shafts, and is essentially a mathematical treatment. In the development, the following subjects are treated in detail: centre of gravity; moment of inertia; the laws of elasticity; coefficients of elasticity; relations between stress and strain; pure stresses, as tension, compression, and shear; elastic limits, working stresses and ultimate resistances of wrought iron, steel, timber, and concrete; reactions and bending moments of beams; bending moment and shear diagrams; theory of flexure. It includes also the design and construction of steel and timber beams, columns, and shafts, and the design of plate girders. *Three periods a week; recitations and lectures with numerous problems. Preparation, 29-5 and 31-3.*

First term. Three term hours.

PROFESSOR ROCKWELL and MR. SMITH

45-2 **Applied Mechanics.** A continuation of the subjects treated in 45-1. In addition, an introduction to the methods of graphic statics, and a brief treatment of the principles of mechanics involved in masonry and concrete construction are given. *Three periods a week; recitations and lectures with problems. Preparation, 45-1.*

Second term. Three term hours.

PROFESSOR ROCKWELL and MR. SMITH

45-3 **Structural Mechanics.** A treatment of the mechanics of masonry structures, including their design and construction. The subjects treated are retaining walls, abutments, masonry arches, chimneys, dams, and masonry foundations. A large part of the course is devoted to design in reinforced concrete structures. *Three periods a week; recitations and lectures with problems and designs. Preparation, 45-2.*

First term. Three term hours. PROFESSOR ROCKWELL

45-12 **Applied Mechanics Laboratory.** This course deals with the resistance of the materials of construction, and comprises the testing of cast iron, steel, wrought iron, timber, and concrete in tension, compression, and shear, and the determination of the elastic limits, ultimate strengths, and coefficients of elasticity of these materials. *One period a week; two hours. Simultaneous with 45-1.*

First term. One term hour. MR. SMITH

47 STRUCTURAL ENGINEERING

47-1 **Roofs and Bridges.** A study of the different methods, algebraic and graphical, for the determination of stresses in simple framed structures. A large part of the course is devoted to the stresses in bridge trusses in use at the present time, such as the Pratt, Warren, and Baltimore trusses with parallel chords, and modifications of these, with curved chords. Some attention is also given to forms that have been used in the past, as the Whipple and lattice trusses. The fundamental principles of influence lines are developed and applied to the simpler forms of trusses. *Three periods a week; lectures and recitations, with problems. Preparation, 45-1. Simultaneous with 45-2.*

Second term. Three term hours. PROFESSOR ROCKWELL

47-2 **Theory of Structures.** An advanced course in the theory of structures, both steel and masonry. It deals with draw-bridges, cantilevers, suspension bridges, and the elastic arch. The method of influence lines is used to a considerable extent in addition to the usual algebraic methods. *Three periods a week; lectures and recitations, with problems. Preparation, 47-1 and 45-3.*

Second term. Three term hours. PROFESSOR ROCKWELL

47-3 **Structural Design.** An introductory course in the design of framed structures. It consists of the complete designs, together with the neces-

sary drawings of a plate girder bridge, a steel roof truss and some timber structure. *Three periods a week; three hours each. Simultaneous with 45-2 and 47-1.*

Second term. Three term hours.

PROFESSOR ROCKWELL and MR. SMITH

47-4 **Structural Design.** The design of steel buildings and reinforced concrete structures. Two or three typical problems in design with estimates of costs are worked out as completely as possible. *Three periods a week; three hours each. Preparation, 47-3. Simultaneous with 45-3.*

First term. Three term hours. PROFESSOR ROCKWELL and MR. SMITH

47-9 **Bridge Design.** A course in the design of riveted and pin connected steel bridges, with details of the distinctive features of each, as large compression and tension members, theory of latticing, large riveted connections, pin connections, splices, wind bracing, portal framing, and floor beam connections. *Two periods a week; three hours each. Preparation, 47-1 and 47-4.*

Second term. Two term hours. PROFESSOR ROCKWELL and MR. SMITH

47-95 **Structural Topics and Reports.** Reports by each student on assigned reading in engineering literature, and on the stability and safety of structures, based on a personal examination by the student. The presentation is by lecture, but a written copy of each report must be left with the department. *Two periods a week; one hour each. Preparation, credit in required work of the Junior year.*

First term. Two term hours.

PROFESSOR ROCKWELL and MR. SMITH

47-99 **Structural Engineering Thesis.** A single topic is developed by extended research, design, or experimentation.

Second term. Three to five term hours. PROFESSOR ROCKWELL

51 MECHANICAL ENGINEERING

51-1 **Steam Engine.** This course deals with the generation of steam and its use in the steam engine. It comprises a study of modern types of boilers and their auxiliary apparatus; simple and compound engines, both condensing and non-condensing; a discussion of the elementary principles of thermodynamics and of the use of the indicator in steam engine practice. Some attention is given to the production of gas for power purposes and its use in the gas engine. *Three periods a week; one hour each. Preparation, 21-13 and 29-3.*

First term. Three term hours. PROFESSOR C. H. CHASE

51-3 **Thermodynamics.** This course is devoted to the thermodynamics of the steam engine and other heat engines, and includes a study of the properties of steam, gas and air as used in steam engines, turbines, gas

engines, air compressors and blowers; also the working fluids and saturated vapors used in refrigeration. The object of the course is to teach the principles, and their application to practical problems. *Three periods a week; one hour each. Preparation, 29-5 and 51-1.*

Second term. Three term hours. PROFESSOR C. H. CHASE

51-7 **Engine Design.** The design of steam and gas engines, involving the strength and proportion of parts, the stresses set up, and the condition for static and dynamic equilibrium. *Three periods a week; two hours each. Preparation, 51-3, and simultaneous with 51-17.*

First term. Three term hours. PROFESSOR C. H. CHASE

51-8 **Power Plant Design.** A study of steam and gas power plant equipment. Boiler design, including calculations for one type of boiler. Pumps, heaters, condensers; arrangement of piping; chimneys, mechanical draft; mechanical stoking, coal handling. Power gas generators, suction and pressure types. *Three periods a week; two hours each.*

Second term. Three term hours. PROFESSOR C. H. CHASE

51-11 **Mechanical Engineering Problems.** The solution and classroom discussion of simple problems in mechanical engineering requiring calculation, design and the exercise of judgment. A large number of problems from practice are presented in the form commonly met by the young engineer. Special emphasis is put on the presentation of results. *Two periods a week; one hour each. Preparation, 51-1 and 51-13.*

First term. Two term hours. MR. SVENSEN

51-13 **Mechanics of Machinery.** Treats of the graphical statics of mechanisms, the determination of the efficiency of machines, the frictional resistance and the forces acting through the several parts. *Three periods a week; one hour each. Preparation, 21-13 and 45-1.*

Second term. Three term hours. PROFESSOR ANTHONY

51-15 **Dynamics of Machinery.** A graphical and analytical consideration of the transmission of energy in machines. The construction of inertia curves and crank effort diagrams applied to the solution of problems relating to fluctuations in speed, flywheels, balancing of moving parts and regulation by governors. *Three periods a week; one hour each. Preparation, 51-13. First given in 1911-12.*

First term. Three term hours. PROFESSOR C. H. CHASE

51-17 **Machine Design.** An application of the principles of mechanism and mechanics to the solution of definite problems in the design of a representative type of machine. A systematic training of the judgment is an important part of this course. *Three periods a week; three hours each. Preparation, 45-2 and 51-13. First given in 1911-12.*

First term. Three term hours. PROFESSOR ANTHONY

51-19 **Production Engineering.** A study of the efficiency of machine tools, the design and construction of special tools for the manufacture of machinery, the investigation of shop conditions and practice for the economical production of machine parts. *Three periods a week; three hours each. First given in 1911-1912.*

Second term. Three term hours.

PROFESSOR ANTHONY and ASSISTANT PROFESSOR STEWART

51-21 **Mechanical Engineering Laboratory.** Efficiency of simple machines; screw threads; hoists; simple, duplex, triplex; rope and belt friction; transmission of power by belts. The determination of the clearance of engines; valve setting on plain slide valve, riding cutoff, and Corliss engines. Gage testing; the adjustment and use of indicators; testing indicator springs; the use of several types of steam calorimeters; injector test; flow of steam through orifices. The results of all laboratory work are submitted in the form of carefully written reports. *Two periods a week; three hours each. Preparation, 51-1. Simultaneous with 51-3.*

Second term. Two term hours.

PROFESSOR C. H. CHASE and MR. SVENSEN

51-23 **Mechanical Engineering Laboratory.** Tests on a horizontal return tubular boiler; coefficient of friction with different oils and power lost in plain and ball bearings; tests on a 35-inch exhaust fan; test on boilers and engines at a 2000 K. W. power station and other power plant tests that may be arranged. *Two periods a week; three hours each. Preparation, 51-26. Omitted after 1910-11.*

Second term. Two term hours. PROFESSOR C. H. CHASE

51-26 **Mechanical Engineering Laboratory.** Steam engines, pumps and auxiliary apparatus. Tests on riding cut-off shaft governor and Corliss engines; a 16 x 8½ x 9 duplex steam pump; measurement of water by weir, nozzle and meter; condenser tests; analysis of flue and producer gases. Internal combustion engines. Tests on a 10 H. P. 4 cycle gas engine, 11 H. P. 2 cylinder 2 cycle gasolene engine, automobile engines, and marine type engines, including instruction and practice in their operation. *Three periods a week; three hours each. Preparation, 51-21. Simultaneous with 51-7.*

First term. Three term hours.

PROFESSOR C. H. CHASE and ASSISTANT PROFESSOR STEWART

51-28 **Mechanical Engineering Laboratory.** Tests on a horizontal return tubular boiler; determination of the velocity of steam through ports; coefficients of friction with different oils and friction on different types of bearings; test on a 35-inch exhaust fan; tests on a steam turbine and on a two-stage air compressor; test at 2000 K.W. power station, and

other tests which may be arranged. *Three periods a week; three hours each. Preparation, 51-26. First given in 1911-1912.*

Second term. Three term hours. PROFESSOR C. H. CHASE.

51-95 **Mechanical Engineering Topics.** A course of lectures by students. Each member of the course chooses three topics from the proceedings of the American Society of Mechanical Engineers. The subjects are presented to the class in the form of lectures, followed by discussion and criticism. *Two periods a week. Preparation, Junior Mechanical Engineering courses.*

First term. Two term hours. PROFESSOR ANTHONY

51-99. **Mechanical Engineering Thesis.** An essay based on extended personal research, design, or experimentation.

Second term. Three to five term hours.

PROFESSORS ANTHONY, C. H. CHASE AND ASSISTANT PROFESSOR STEWART

54 GEOLOGY

The subjects offered in the department of Geology do not form a sequence, but are intended to give different classes of students that knowledge of geology and mineralogy which they need. In all cases, they aim to include some real grasp upon the structure and history of the earth, the problems presented in the study thereof, and the modes of attack upon those problems. The first subject (Geology 1) is introductory, open to all, and intended primarily for those who have had no previous work in science. The other subjects are such that certain preliminary studies, stated in connection with each, must be taken before entering upon them.

The illustrative collections in these lines are ample. Besides exhibition specimens in the Barnum Museum, there is a working collection illustrating mineralogy, lithology, and dynamical and historical geology. These are supplemented with maps, diagrams, photographs, and lantern slides. The work in each subject consists of lectures and recitations, together with work in the laboratory and in the field. Excursions are taken to neighboring points that illustrate certain phenomena. Tufts College is well placed for field work and for the study of various natural processes.

54-1 Physical Geology and Geography Lectures and recitations; laboratory and field work.

Second term. Three term hours. PROFESSOR LANE

54-2 General and Economic Geology. Lectures and recitations; laboratory and field work. *Six hours a week.*

First and second terms. Six term hours. PROFESSOR LANE

54-3 Mathematical Problems presented to Geologists. Conferences and critical reading of selected papers and original work.

First and second terms. Six term hours. PROFESSOR LANE

54-4 Field Geology. *One recitation and six hours field work a week. Preparation, 54-2.*

First part of first and last part of second term. Three term hours.

PROFESSOR LANE

61 ELECTRICAL ENGINEERING

The aim of the work in this department is to fit men to deal intelligently with electrical problems likely to be presented to the practical engineer. With this in view, principles rather than details are emphasized, and these principles are developed and fixed by the free use of concrete problems as well as by laboratory experiments and tests.

61-1 Electrical Laboratory. An introduction to electrical testing, including the calibration of instruments, the study of arc and incandescent lamps, the storage battery, and the magnetic properties of iron. During the term some of the more elementary dynamo tests are undertaken. *Two periods a week; three hours each. Preparation, 31-7 and simultaneous with 61-3.*

First term. Two term hours.

ASSISTANT PROFESSOR ROLLINS and MR. MUNRO

61-2 Electrical Laboratory. A continuation of 61-1 treating of dynamo tests. *Two periods a week; three hours each. Preparation, 61-1.*

Second term. Two term hours.

ASSISTANT PROFESSOR ROLLINS and MR. MUNRO

61-3 Dynamo Electric Machinery. An elementary course dealing with the fundamental principles of dynamo electric machinery and their application in the construction and operation of generators and motors. Some attention is also given to storage batteries, arc and incandescent lamps and systems of direct-current distribution. *Three periods a week; one hour each. Preparation, 31-3.*

First term. Three term hours. PROFESSOR HOOPER

61-5 Alternating Current Machinery. A course treating of the theory construction, and operation of synchronous machinery. *Three periods a week; one hour each. Preparation, 61-3.*

First and second terms. Second term only after 1910-11. Three term hours. PROFESSOR HOOPER

61-6 Alternating Current Machinery. A continuation of 61-5, treating of the synchronous convertor, transformer, induction motor, and commutating motors. *Three periods a week; one hour each. Preparation, 61-5. Discontinued after 1910-11.*

Second term. Three term hours. PROFESSOR HOOPER

61-7 Dynamo Laboratory. Advanced, direct, and alternating dynamo testing. *Two periods a week; three hours each. Preparation, 61-1 and 61-3. Simultaneous with 61-5. After 1910-11 Simultaneous with 61-15 and 61-16.*

First and second terms. Four term hours.

ASSISTANT PROFESSOR ROLLINS AND MR. MUNRO

61-11 Alternating Currents. The mathematical development of equations and formulas from elementary electrical principles, and the physical interpretation of the equations and formulas thus developed. *Three periods a week; one hour each. Preparation, 31-3 and 29-5.*

First term. Three term hours. PROFESSOR HOOPER

61-15 Electrical Engineering. A course dealing with the production-transmission, distribution, and utilization of electrical power. *Three recitations a week, with solution of assigned problems. Preparation, 61-5.*

Second term. Three term hours. First term after 1910-11.

PROFESSOR HOOPER

61-16 Electrical Engineering. A continuation of 61-15. *Three periods a week; one hour each. Preparation, 61-15.*

Second term. Three term hours. Omitted in 1910-1911.

PROFESSOR HOOPER

61-17 Telephone and Telegraph. A course on principles and operation of telephone and telegraph systems. *Three periods a week. Preparation, 31-3 and 61-1.*

First term. Three term hours. ASSISTANT PROFESSOR ROLLINS

61-21 Dynamo Design, D.C. A course on the practical design of direct-current machinery. *Three periods a week; two hours each. Preparation, 61-3.*

First term. Three term hours. MR. MUNRO

61-22 Dynamo Design, A.C. A course on the practical design of alternating current apparatus. *Three periods a week; two hours each Preparation, 61-3 and 61-21.*

Second term. Three term hours. MR. MUNRO

61-95 Electrical Topics. Lectures by students on electrical subjects,

followed by discussion and criticism. *Three periods a week. Preparation, 61-15.*

Second term. Three term hours. PROFESSOR HOOPER

61-99 Thesis. An essay based on some construction, design, or investigation.

Second term. Three to five term hours.

PROFESSOR HOOPER, ASSISTANT PROFESSOR ROLLINS and MR. MUNRO

64 MINERALOGY

64-1 Mineralogy and Lithology. *Two recitations and four hours laboratory work a week. Preparation, 35-1.*

First term. Three term hours. PROFESSOR LANE

64-1 Mineralogy alone may be of use to civil and structural engineers, but those who are looking to mining or chemical engineering should take both 64-1 and 64-2, if either.

64-2 Crystallography and Descriptive Mineralogy. *Two lectures and four hours laboratory work a week. Preparation, 64-1.*

Second term. Three term hours. PROFESSOR LANE

81 POLITICAL ECONOMY

81-2 Elements of Economics. Designed especially for students of engineering; aims at a comprehensive study of the elements of economics, with special reference to present day economic and social problems. Text book, lectures, tests. *Three recitations a week.*

First and second terms. Six term hours. PROFESSOR METCALF

66-5 Money, Credit, and Banking. An historical course, with special reference to the financial experience of the United States. Leading topics are Hamilton's financial system; protection and revenue tariffs; the bank question; the fiscal policy of the Civil War; resumption of specie payments; the national banking system; State and local taxation; silver legislation and the panic of 1893; government loans; present currency problems. Dewey's financial History of the United States is used as a guide. *Three recitations a week. Preparation, 81-1.*

Second term. Three term hours. PROFESSOR METCALF

66-16 Modern Labor Problems. This subject deals mainly with the social and economic problems arising from the relations of employers and their laborers. The chief topics will be the growth, methods, and aims of modern associations of wage earners; methods of conciliation and arbitration; strike and factory legislation; employers' liability and recent compensation acts; compulsory publicity; provident institutions and friendly societies. Each member of the class will be expected to make a report upon a labor union. *Lectures and recitations. Three recitations a week. Preparation, 81-1.*

Second term. Three term hours. PROFESSOR METCALF

THE GRADUATE SCHOOL

Faculty of the Graduate School

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT

J. STERLING KINGSLEY, SC.D., DEAN
Professor of Biology

PHILIP M. HAYDEN, A.B., SECRETARY

CHARLES E. FAY, A.M., LITT.D.
Wade Professor of Modern Languages

WILLIAM L. HOOPER, A.M., PH.D.
Professor of Electrical Engineering

RICHARD JONES, PH.D.
Professor of English Literature

FRANK W. DURKEE, A.M.
Professor of Chemistry

GEORGE VAN NESS DEARBORN, A.M., PH.D., M.D.
Professor of Physiology

WILLIAM K. DENISON, A.M.
Professor of the Latin Language and Literature

LAWRENCE B. EVANS, PH.D.
Professor of History

HENRY C. METCALF, PH.D.
Jackson Professor of Political Science

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

FRANK G. WREN, A.M.
Walker Professor of Mathematics

ALFRED W. BALCH, PH.G., M.D.
Assistant Professor of Medical Chemistry

STANDING COMMITTEES OF THE GRADUATE SCHOOL

EXECUTIVE: Professor Hooper, *Chairman*; Professors Denison and Metcalf.

REQUIREMENTS FOR DEGREES: Dean Kingsley, *Chairman*; Professors Evans and Wade.

The Graduate School

INSTRUCTION

Graduate instruction is given by members of the several existing faculties. The advanced elective work offered to undergraduates in any department of the School of Liberal Arts is open to graduate students, and will count for the degree of Master of Arts, on condition that it be not counted for any other degree.* Additional courses still more advanced may be arranged with the instructor in whose department the work is to be done.

DEGREES

The degrees offered are Master of Arts and Master of Science. Departments at present open to candidates for the degree of Master of Arts are:—

English,	Mathematics,
Modern Languages,	Chemistry,
Ancient Languages,	Physiological Chemistry,
History and Public Law,	Biology,
Political Science,	Physiology,
	Electricity.

The degree of Master of Science is offered in Biology, in Chemistry, and in Engineering.

The Degree of Master of Arts will be conferred upon graduates of Tufts College who have received the degree of Bachelor of Arts, or upon graduates of other colleges whose course of study has been equivalent to that required at Tufts College for the degree of Bachelor of Arts, upon the following conditions: —

1. They shall have completed an approved course of advanced study, including the equivalent of at least thirty term hours, in one or at the most two departments. If two departments are chosen they should be allied, and should occupy the relation of major and subsidiary department.

* Students doing work in undergraduate classes are required to take the appointed final examination with these classes.

2. This course shall be pursued during a residence of not less than one year. In the case of graduates of Tufts College, the condition of residence may be waived by special permission, but the degree cannot then be taken with less than two years of graduate study.

3. The candidate shall prepare a thesis in the form prescribed by the regulations, which may be ascertained at the Secretary's office, and shall pass a satisfactory examination under the supervision of a board of three examiners, appointed by the Graduate Faculty at its May meeting. The thesis must be presented at least one month before Commencement.

4. No subject counted for the first degree will be counted for the second degree.

5. Students taking the degree at the end of a four years' course of study must have complied with the requirement as to standing governing those who receive the degree of A.B. at the end of three years; that is, an average standing of Grade B, or higher, must have been attained on the entire work of the course.

6. Candidates for this degree must make a written application to the Graduate Faculty before October 1 of the college year in which the degree is to be conferred, and if the degree is not taken after one year of study they must also give a second notice three months before receiving the degree. This application shall indicate the department or departments in which it is proposed to pursue work for a degree.

Graduates of Tufts College who have taken the degree of Bachelor of Philosophy, or graduates of other colleges holding a degree of similiar grade, must complete the requirement for the degree of Bachelor of Arts before they can be entered as students in courses leading to the degree of Master of Arts.

THE DEGREE OF MASTER OF SCIENCE will be conferred upon Bachelors of Science who shall satisfactorily pursue advanced professional study at Tufts College for one year, under the conditions required of candidates for the degree of Master of Arts; or upon Bachelors of Science of Tufts College who shall pursue graduate work *in absentia* for at least two years, or who shall present suitable evidence of three years of professional work, one year of which must be in a position of responsibility, in which case a certain amount of professional study will be assumed. A thesis based upon this study will be required.

DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF MASTER OF ARTS

[For detailed statements of the subjects referred to in the following pages, see "Departments of Instruction" in the announcement of the School of Liberal Arts.]

ENGLISH.—It is assumed that candidates for the degree of Master of Arts in English will have already laid a good foundation in English composition and the history of English literature. The amount of work expected is roughly indicated by that required of a major student in English at this College. When not anticipated in undergraduate work, the subjects numbered 7, 10, 14 to 19, 21, 23, 25, 26, 27, and 28, may be counted towards the Master's degree, provided that the work done distinctly surpasses in quality that required of undergraduates. On the other hand, a part of the work or the entire work for the advanced degree may consist of a special course of study, undertaken under the direction of the department. Such special work must be of creative or investigative order. It may take the form of discussion of some question in literary history or literary criticism. It may consist of the intensive study of an author or a period. The use of German and French is sometimes necessary. A final oral examination is customary.

MODERN LANGUAGES.—The undergraduate subjects at present offered in Modern Languages enable the candidate for the degree of Bachelor of Arts who specializes in this department to cover the work formerly required for the Master's degree. For those who have not taken the more advanced subjects, the department offers a full graduate course leading to the degree of Master of Arts. The work is performed in existing undergraduate classes. To enter upon this course, the candidate must have completed the equivalent of six of the Modern Language subjects, including 1 and 3 in both German and French. Of elementary subjects only Italian may be taken, by such as have had the equivalent of two years of French. Graduate students whose special work is being performed in other departments are admitted to such classes in German and French, beyond subject 1, as their proficiency will warrant.

ANCIENT LANGUAGES. — Candidates for the degree of Master of Arts in Greek or Latin must have completed, for Greek, subjects 1, 2, 3, and 4 or 5; for Latin, subjects 1, 2, 3 or 4, and 5, or equivalents. It is desirable that candidates for this degree in either of the ancient languages present the other as a minor department. Exceptional cases will be treated in accordance with the varying circumstances. Greek 4, 5, 7, 8, and 9, Latin 3, 4, 6, 8, 9, 10, and Classical Archæology 1, 2, 3, 4, 5, and 6, so far as these have not been anticipated as undergraduate work, may be counted towards the Master's degree. Graduate students will be expected to do work of an advanced character, either in classes with undergraduates or on special lines of investigation assigned by the instructors. The required thesis, on an approved topic, must embody the results of the investigation of some author or period, or of some philological or archæological subject. A reading knowledge of French and German is indispensable.

HISTORY AND PUBLIC LAW.—Before beginning graduate work in History and Public Law every student must have completed History 1 and 2, and Public Law 1 or 2, or their equivalent. The advanced subjects enumerated in the catalogue, in so far as they are suited to the needs of the candidate, may be offered for the higher degrees, but it is expected that much of the candidate's work will consist of special work pursued under the direction of the department.

For the degree of Master of Arts, a working knowledge of French is essential. A similar knowledge of German is desirable, and in some cases may be necessary. In addition to the subjects required for the degree candidates will be expected to do something in the way of an independent investigation of a definite subject, the result to be embodied in a thesis.

A final oral examination is customary.

POLITICAL SCIENCE.—The degree of Master of Arts in Political Science is conferred on graduates of Tufts College who pursue successfully one year of resident graduate study. Bachelors of Arts of other colleges must satisfy the department

that they are qualified by previous training to enter upon the desired course of study, and show the results of a year's resident graduate work with high credit. A good reading knowledge of French and German is desirable, and may in certain lines of work be necessary. Before receiving the degree all candidates are expected to sustain a final oral examination, and give evidence by a thesis of their ability to do work of the investigative order. In addition to the regular advanced work offered by the department, special subjects giving opportunity for original investigation will be outlined for candidates wishing to pursue them.

MATHEMATICS.— Graduate students in Mathematics must have acquired a working knowledge of the calculus, and may offer as part of their work for the Master's degree any of the subjects given by the department except the first six, but subjects 7, 9, and 10, or their equivalents, must be included. Candidates will hold themselves in readiness to be examined at the end of their studies upon any topics treated in the first six subjects, as well as upon work offered for the degree.

CHEMISTRY.—The requirements for beginning graduate work in Chemistry are the completion of subjects 1, 2, and 3, or their equivalent. Subjects 4, 5, 7, 8, 9, 10, 12, and 14 may be counted toward the Master's degree, if they have not been counted as undergraduate work. Examination is required, and a satisfactory thesis.

PHYSIOLOGICAL CHEMISTRY. — The work in Physiological Chemistry requires in preparation a thorough foundation in inorganic and organic chemistry, including qualitative and quantitative analysis; the ability to read scientific French and German readily; and a thorough knowledge of the elements of physics, particularly with reference to the laws of the density of gases and fluids under heat and pressure, as well as such acquaintance with optics as will enable one to use intelligently the polariscope, the spectroscope, and the microscope.

The course is one of laboratory work wholly, under the per-

sonal advice and assistance of the instructor, and must include one original investigation, to require not less than one half-year, and to be accompanied by a satisfactory thesis upon the results of such research. The subject of this investigation may be taken from the realm of enzymes, metabolism, or hygiene. A rigid examination will also be demanded upon the principles of physiological chemistry.

PHYSIOLOGY.—Before beginning graduate work in Physiology the candidate for the degree of Master of Arts must have had at least a year's training in biology, and, besides, a knowledge of the outlines of anatomy and physiology such as may be obtained from such works as Martin's Human Body, with simple laboratory experiments. A reading knowledge of French and German is desirable, and in some cases may be necessary. The work of the year is largely practical. It involves the completion of the work in physiology required of candidates for the degree of Doctor of Medicine, and, in addition, the investigation of some simple problem which shall serve as the basis of the required thesis.

BIOLOGY.—Before beginning graduate work in Biology the student must have a good knowledge of the elements of vertebrate and invertebrate anatomy and of physiology (subjects 1 to 4 of Tufts College, or their equivalent), and must be able to use French and German. The work offered for advanced degrees is in the lines of comparative anatomy and of the histology and embryology of animals. Consequently the greatest stress will be laid upon laboratory work, but students may also take the subjects numbered 5, 6, 8, and 9.

For the degree of Master of Arts or Master of Science the student must pass a satisfactory examination in the principles of morphology, and present an acceptable thesis embodying the result of research.

ELECTRICITY.—As a preparation for graduate work in Electricity the candidate must have a thorough mathematical foundation, including differential equations, and a good knowledge

of physics, including elementary electrical tests (Physics 2 and 31-1 to 31-4 of Tufts College, or an equivalent). Unless these requirements be met upon beginning graduate work, it will scarcely be possible to obtain the master's degree in one year.

The graduate work will include the satisfactory completion of subjects 61-3, 61-5, 61-6, 61-7, 61-9, and 61-11, and the preparation of an acceptable thesis involving original research.

FELLOWSHIPS

THE OLMSTEAD AND MINER FELLOWSHIPS IN NATURAL HISTORY.—In accordance with the spirit of the gift of the late Charles Hyde Olmstead, of Hartford, Conn., the Trustees have established two fellowships in Natural History, to be known respectively as the Olmstead and the Miner Fellowship. The income of these fellowships, amounting to two hundred and fifty dollars annually each, is awarded by the Trustees to graduate students in Natural History, upon recommendation of the Administrative Board. The conditions of the fellowships are as follows:—

(1) The application must be made in writing before May 1, addressed to the President of the College. It must contain evidence of a liberal education, and of ability to profit by the work to be done, as well as testimonials of good character from instructors or others. Any original article, either written or printed, is an aid in ascertaining the attainments of the candidate.

(2) The holder of the fellowship will be expected to devote himself to the prosecution of some special subject, under the direction of the professor in charge of the department of Natural History. He may be called upon for minor services, such as conducting examinations, but he shall not be called upon to teach. He may, however, at his own option, and with the approval of the President, give instruction by lectures or otherwise to persons connected with the College, but not elsewhere.

(3) The payments will be made half in January and half in June; but, in case of resignation or removal from the fellowship, payment will be made only for the time it is actually held. The holder of the fellowship is not exempt from the payment of tuition.

(4) Residence is a condition of holding either of these fellowships.

The holder of a fellowship may be eligible to a single re-election, but incumbency constitutes no claim to re-appointment.

SCHOLARSHIPS

The Trustees of Tufts College have established eleven scholarships, one in each department offering graduate work. Each scholarship gives free tuition to the incumbent, who is expected to devote himself exclusively to advanced study.

These scholarships are awarded by the Graduate Faculty, on recommendation of the heads of departments concerned, at or before the beginning of the year in which they are to be conferred. Applications must be made to the President on or before May 1 of the preceding year, and will regularly be acted upon at the June meeting of the Graduate Faculty.

TUITION

The tuition fee for the whole course for the degree of Master of Arts, or Master of Science, is *one hundred dollars*, of which *fifty dollars* is payable in advance.

THE CRANE THEOLOGICAL SCHOOL

Faculty of the Crane Theological School*

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT

CHARLES H. LEONARD, A.M., D.D., LL.D., DEAN, EMERITUS
Goddard Professor of Homiletics and Pastoral Theology

PHILIP M. HAYDEN, A.B., SECRETARY†

GEORGE T. KNIGHT, A.M., D.D.
Packard Professor of Christian Theology

GEORGE M. HARMON, A.M., D.D.
Professor of Biblical Theology

HENRY I. CUSHMAN, A.M., PH.D.
Instructor in Homiletics and Pastoral Care

HINCKLEY G. MITCHELL, A.M., S.T.B., PH.D., D.D.
Professor of Hebrew and Old Testament Exegesis

LUCIUS M. BRISTOL, A.M., S.T.B.
Instructor in Applied Christianity

—— ——
Woodbridge Professor of Applied Christianity

EDWIN C. BOLLES, A.M., PHD., D.D., LL.D.
Dickson Professor of English and American History

WILLIAM G. TOUSEY, A.M., D.D.
Professor of Logic and Ethics

J. STERLING KINGSLEY, SC.D.
Professor of Biology

RICHARD JONES, PH.D.
Professor of English Literature

ALFRED C. LANE, A.M., PH.D.
Pearson Professor of Geology and Mineralogy

HERBERT E. CUSHMAN, A.M., PH.D.
Professor of Philosophy

*Below the line are printed the names of professors who, while not members of the Theological Faculty, offer subjects that are open to students of the School.

† *Ex officio*, as Secretary of the Department of Arts and Sciences.

THOMAS WHITTEMORE, A.B.
Professor of English

HENRY C. METCALF, A.B., PH.D.
Jackson Professor of Political Science

LAWRENCE B. EVANS, PH.D.
Professor of History

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

OSCAR MARTIN, M.D.
Director of the Gymnasium

COMMITTEE ON PROMOTIONS

President Hamilton, *Chairman;* Professors Harmon and Hayden.

The Crane Theological School

The Theological School is one of the co-ordinate departments of Tufts College. Students of the School are members of the College, enjoying its privileges and subject to its regulations.

COURSES OF STUDY

A course of three years, open to college graduates, leads to the degree of Bachelor of Divinity.

A course of six years leads to the degrees of A.B. and B.D., the requirements for admission being the same as those for candidates for the degree of A.B.

A course of four years leads to the degree of B.D., the requirements for admission being the same as those for candidates for the degree of A.B.

Special courses are arranged for such persons as may be deemed by the Faculty qualified for work in the School.

SYNOPSIS OF THE REQUIREMENTS FOR A.B. AND B.D.

[The unit here used (called the "term hour") is equivalent to one program hour a week for a half-year.]

	Term Hours
Language (Greek, Latin, German, French; each student to take *three*)	18
Science (Mathematics, Physics, and Biology or Chemistry)	18
History (Civil and Religious)	18
Bible	27
Philosophy (Psychology, Logic, Ethics, Systematic Theology, etc.)	30
Sociology (Economics and Applied Christianity)	12
English (Rhetoric, Literature, Oratory, and Homiletics)	36
Pastoral Care	6
Physical Training	2
Electives	15
Total term hours	182

SYNOPSIS OF THE FOUR-YEAR COURSE FOR B.D.

[The unit here used (called the "term hour") is equivalent to one program hour a week for a half-year.]

	TERM HOURS
BIBLE	33
PHILOSOPHY (Logic, Ethics, Theology)	21
ENGLISH (Rhetoric, Literature, Oratory, Homiletics)	30
HISTORY (Civil and Religious)	18
APPLIED CHRISTIANITY	6
PASTORAL CARE	6
PHYSICAL TRAINING	2
ELECTIVES	6
Total	122

For all theological students the major instructor and official adviser on general matters relating to college affairs is the Dean of the Theological School, or some appointed representative from the Theological Faculty.

Departments of Instruction

58 OLD TESTAMENT

PROFESSOR MITCHELL

The constant aim in this department will be to give the student such a knowledge of the Hebrew Scriptures as will enable him personally to appreciate their varied excellence and utilize them as a source of inspiration and instruction in his ministry. The first step in this direction is the acquisition of a working knowledge of the Hebrew language; the second a thorough course in exegesis. Those who take these courses will be able to study with profit such general subjects as Introduction to the Old Testament, History of the Hebrews, and Ethics, or Theology of the Old Testament, as they are offered.

SUBJECTS

3. The Hebrew Language. First Semester: the elements of Hebrew etymology, with exercises in reading and writing Hebrew. Second Semester; readings from the books of Judges and Samuel, with notes and references on Hebrew syntax. *Three hours, to be arranged.*
PROFESSOR MITCHELL

6. The Narrative Literature. A comparative study of the historical books to determine their relative value from the literary, historical, and religious standpoint. *Two hours, to be arranged.* (F)
PROFESSOR MITCHELL

7. The Prophetic Literature. An examination of selections from the works of the principal prophets, to ascertain the literary and doctrinal peculiarities of each, and his place in the development of Hebrew prophecy. *Two hours, to be arranged.* (S) PROFESSOR MITCHELL

[8. The Didactic Literature. The books of Job, Proverbs, and Ecclesiastes, and their significance for the history of Hebrew thought. *Two hours, to be arranged.* (F) PROFESSOR MITCHELL]

[9. The Lyric Literature. Early songs; select psalms of devotional or theological importance; the Song of Solomon and its structure and meaning. *Two hours, to be arranged.* (S) PROFESSOR MITCHELL]

10. The Ethics of the Old Testament. A survey of the development of moral ideas among the Hebrews, with lectures and papers. *One hour, to be arranged.* PROFESSOR MITCHELL

[11. Introduction to the Old Testament. An inquiry into the age, structure, authorship, and history of the several books, with lectures and papers. *One hour, to be arranged.* PROFESSOR MITCHELL]

68 NEW TESTAMENT

PROFESSOR HARMON

This department has three divisions: History, Criticism, and Exegesis; and for students who have not had Greek, a course in New Testament Greek is provided. The historical course covers the two centuries preceding the ministry of Jesus, with the aim to give the student a knowledge of the conditions under which Christianity entered the life of the world, the ministry of Jesus, and the rise and development of the Apostolic Church. The method pursued in this study is to refer the student to authorities dealing with the topics assigned and notes given by the instructor. In Criticism the student deals with the sources

of the text and the methods for determining its correctness, also with the facts of the different New Testament writings. In this the method pursued is the same as in the study of the history. In Exegesis the work is of reading selected passages from the Greek of the Synoptic Gospels, the Fourth Gospel and the Pauline Epistles. The instructor gives the student from time to time notes as to the principles of exegesis, requiring him to exemplify them in his work. He is also taught the discriminating use of commentaries with the aim to form the habit of independent and correct interpretation.

SUBJECTS

11. History of the Beginnings of Christianity. *TTS 3.*
PROFESSOR HARMON

2. New Testament Criticism. *Three hours, to be arranged.* (S)
PROFESSOR HARMON

3. New Testament Exegesis and Theology. *TTS 2.*
PROFESSOR HARMON

[4. New Testament Greek. *Three hours, to be arranged.*
PROFESSOR HARMON]

56 HISTORY OF RELIGIONS

PROFESSOR KNIGHT

The department of History of Religions deals with a special phase of the general subject of history, showing the growth of superstition and religion, and their relation to civilization — including politics, social life, philosophy, literature, art, and personal character. See also the subjects listed in the departments of Old Testament and New Testament.

SUBJECTS

4. Non-Christian Religions. Comparative studies of religion and civilization in ancient Egypt, and Chaldea, and in ancient and modern India, China, Japan, and Turkey. *Three hours, to be arranged.* (F)
PROFESSOR KNIGHT

5. History of the Church, including the Sects, from the Apostles to the present time. T J *TTS 4*
PROFESSOR KNIGHT

6. Special studies of religion and superstition, ancient and modern. *Three hours, to be arranged.* (S)
PROFESSOR KNIGHT

History of Religions 6 is open only to those who have taken History of Religions 4.

16 ETHICS AND PHILOSOPHY OF THEISM

The several courses in Ethics and the Philosophy of Theism offered by Professor Tousey of the School of Liberal Arts are open to theological students, and are included in the curriculum of the Theological School. For detailed statement of subjects, see Philosophy 6, 7, 8, and 15 in the statement of that department in the School of Liberal Arts.

86 THEOLOGY

PROFESSOR KNIGHT

The purpose is, primarily, to assist the student to think independently on theological subjects, and to abide in the consequences. In pursuing this purpose, attempt is made to co-ordinate the products of biblical theology, religious history, natural theology, ethics, and, indeed, of all the proper sources of material, and thus to produce a scientific theology. It is believed that such a system will deserve and receive the student's confidence, and will enlist his energies.

The method includes several stages: —

1. The history of important doctrines and creeds, as a general introduction.

2. *a.* Special history of the topic in hand, with analysis and classification of opinions and theories according to their logical relations.

b. The collection of the facts, so far as given in the present state of knowledge, and the criticism of the theories on the basis of the facts.

c. The organization of the results into a scientific product.

d. Illustrative applications to practical problems,—ecclesiastical, political, social, and personal.

SUBJECTS

1. Historical Introduction. *Three hours, to be arranged.* (S) PROFESSOR KNIGHT

2. Theology; anthropology; soteriology; eschatology; critical study of modern doctrines. *MWF 5.* PROFESSOR KNIGHT

76 APPLIED CHRISTIANITY

Christianity will be considered with special reference to the practical problems of life, individual and social, under the three general aspects of religious education, religious expansion and social regeneration. The subjects will be adapted not only to ministers, but to all interested in active Christian work. Lectures, assigned reading, and discussions will be supplemented by personal investigation of religious and philanthropic institutions in Greater Boston, with written reports.

SUBJECTS

2. Religious Pedagogy. This course will deal with the various problems of moral and religious education. Such questions will be discussed as the psychological basis of moral and religious training, the religion of childhood, growth of character towards the Christian ideal, Sunday School organization and methods. *Three hours, to be arranged.* (F)

MR. BRISTOL

3. Missions. The missionary motive; reflex value of missionary endeavor; correlation of home and foreign missions. Home Missions: frontier work; negroes and mountain whites of the South; Alaska, Hawaii, Porto Rico, the Philippines; the mission problem of the city church; opportunities of the rural church. Foreign Missions: the expansion of Christianity during the Nineteenth Century, especially in India, China, Japan, Corea and Africa. Special emphasis will be given to the sociological aspects of missionary endeavor. *Three hours, to be arranged.* (S) MR. BRISTOL

Applied Christianity 3 will not be given in 1911-12.

[4. Social Christianity. The development of social Christianity will be sketched from early Hebrew times through the New Testament literature, the Patristic period, medievalism to modern times, including such movements as those of Monasticism, Pietism, Communism and Christian Socialism. The second part of the course will consist of a study of modern social problems in the light of social science, social history and the teachings of Jesus. *Three hours, to be arranged.* (S) MR. BRISTOL]

Applied Christianity 4 may be expected in 1911-12.

82 HOMILETICS

DR. H. I. CUSHMAN

The work consists of studies in constructive homiletics; the varying conception of preaching as determined by the person and the time; helps in the preparation of sermons from the

study of history, literature, and character; the preparation and delivery of sermons; practice in extempore discourse; the cultivation of power in preaching; the study of representative preachers.

SUBJECTS

1. Inductive Homiletics, *Three hours, to be arranged.*
DR. H. I. CUSHMAN

2. Constructive Homiletics. *Three hours, to be arranged.*
DR. H. I. CUSHMAN

[11. Pastoral Care. *Three hours, to be arranged.* ——— ———]

SIX-YEAR COURSE

A detailed synopsis follows of the Course of Six Years, arranged for one who enters with Greek * and Latin, and leading to degrees A.B. and B.D.

FIRST YEAR

FIRST TERM		SECOND TERM	
English 1	3	English 2	3
Mathematics 3	3	Mathematics 1 or 2	3
Physics 1	3	Physics 1	3
Greek 2	3	Greek 2	3
French or German	3	French or German	3
Physical Training		Physical Training	

SECOND YEAR

FIRST TERM		SECOND TERM	
Philosophy 1	3	Oratory 1	3
History 1	3	History 1	3
Biology 1 or Chemistry 1	3	Biology 1 or Chemistry 1	3
German or French	3	German or French	3
English (elective)	3	English (elective)	3
Physical Training		Physical Training	

THIRD YEAR

FIRST TERM		SECOND TERM	
Political Science 1	3	Political Science 1	3
History of Religions 5	3	History of Religions 5	3
New Testament 11	3	New Testament 11	3
Philosophy 3	3	New Testament 2	3
Oratory 2	3	One elective	3

FOURTH YEAR

FIRST TERM		SECOND TERM	
New Testament 3	3	New Testament 3	3
Old Testament 3	3	Old Testament 3	3
Philosophy 6	3	Philosophy 7	3
Applied Christianity 2	3	Applied Christianity 3 or 4	3
English (elective)	3	English (elective)	3

* Those who enter with no Greek must take New Testament Greek in place of one of the free electives, and may substitute Latin 1 for Greek 2.

FIFTH YEAR

First Term		Second Term	
Homiletics 1	3	Homiletics 1	3
Philosophy 15	3	Philosophy 15	3
Theology 2	3	Theology 2	3
Old Testament 6 or 8	2	Old Testament 7 or 9	2
Old Testament 10 or 11	1	Old Testament 10 or 11	1
One elective	3	One elective	3

SIXTH YEAR

First Term		Second Term	
Homiletics 2	3	Homiletics 2	3
History of Religions 4	3	History of Religions 6	3
Pastoral Care	3	Pastoral Care	3
Education 5	3	Education 5	3
One elective	3	One elective	3

FOUR-YEAR COURSE

A detailed synopsis follows of the Course of Four Years, arranged for one who enters without Greek,* and leading to the degree of B.D.

FIRST YEAR

First Term		Second Term	
English 1	3	English 2	3
History 1	3	History 1	3
New Testament 11	3	New Testament 11	3
Philosophy 3	3	New Testament 2	3
One elective	3	Oratory 1	3
Physical Training		Physical Training	

SECOND YEAR

First Term		Second Term	
Philosophy 6	3	Philosophy 7	3
New Testament 4	3	New Testament 4	3
History of Religions 5	3	History of Religions 5	3
English (elective)	3	English (elective)	3
Oratory 2	3	One elective	3
Physical Training		Physical Training	

THIRD YEAR

First Term		Second Term	
Homiletics 1	3	Homiletics 1	3
Old Testament 3	3	Old Testament 3	3
New Testament 3	3	New Testament 3	3
History of Religions 4	3	History of Religions 6	3
Philosophy 15	3	Philosophy 15	3

FOURTH YEAR

First Term		Second Term	
Homiletics 2	3	Homiletics 2	3
Theology 2	3	Theology 2	3
Old Testament 6 or 8	2	Old Testament 7 or 9	2
Old Testament 10 or 11	1	Old Testament 10 or 11	1
Applied Christianity 2	3	Applied Christianity 3 or 4	3
Pastoral Care	3	Pastoral Care	3

* One who enters with Greek and Latin has a larger range of electives.

Supplementary Information

[See also the section devoted to General Information.]

RELIGIOUS OBSERVANCES

The students in the Crane Theological School attend daily morning prayer in Goddard Chapel; and religious services, in the care of the students, are held in Packard Hall from time to time.

SUPPLEMENTARY LECTURES

Lectures which bear upon the general work of the Christian ministry, and upon special subjects of study, are given at intervals throughout the year by well-known clergymen and others of the vicinity.

The most noted divines of New England officiate every Sunday within easy distance, and may be studied by the student in respect to their teachings and their methods. It is the policy of the School to encourage the judicious use of these important instrumentalities of culture.

LICENSE TO PREACH

The regular time for applying for licensure is a year and a half before graduation. Before that time the members of the Theological School are not allowed to preach.

BUILDINGS FOR THE USE OF THE THEOLOGICAL SCHOOL

The building formerly known as Middle Hall has been entirely remodelled and fitted for the use of the Theological School under the name of Packard Hall. It contains five well-lighted lecture rooms, a chapel, a library, and offices for the members of the faculty.

Paige Hall, the dormitory of the Theological School, contains thirty-six single rooms, heated by steam and lighted by gas and electricity. Each room is provided with all necessary furniture — except sheets, blankets, pillow-cases, and towels.

EXPENSES AND PECUNIARY AID

Students in the Theological School are charged *one hundred dollars* annually for tuition. This charge includes the privilege of occupying a room in Paige Hall, and provision for heating and caring for it.

The following scholarships are assigned exclusively to theological students; certain prizes are also available under conditions, especially as described under "General Information."

The General Convention of Universalists aids students by free scholarships, not exceeding one hundred and twenty-five dollars a year to any one student, subject always to the recommendation of the Faculty of the Theological School. Those students, also, who are in the regular course are permitted to preach, under the direction of the Faculty, during the year-and-a-half preceding their graduation. In this way they may add to their pecuniary resources.

THE GREENWOOD SCHOLARSHIP.—The income of one thousand dollars, bequeathed by the late Mrs. Eliza M. Greenwood, of Malden, is given to that member of the advanced class in homiletics who, maintaining a high standard of work as a student, has made in all the work in Homiletics and Oratory the most satisfactory progress.

THE JOHN MURRAY SPRAGUE AND ELIZA FLETCHER SPRAGUE SCHOLARSHIP.—The income of two thousand dollars, bequeathed by the late John M. Sprague, is appropriated to the aid of needy and deserving students in the Crane Theological School, preference being given to any student, otherwise eligible, who is a direct descendant of the donor's father, John Sprague.

THE DOCKSTADER SCHOLARSHIP.—The income of ten thousand dollars, given by George A. Dockstader, of New York, is appropriated to the aid of needy and worthy students.

The following scholarships amount to fifty dollars each :—

THE WHITTEN SCHOLARSHIP.—Founded by Mrs. Maria F. Whitten, of Cambridge.

THE HOLT SCHOLARSHIP.—Founded by Miss Celia Holt, of Stafford, Conn.

THE HENRY L. BALLOU SCHOLARSHIP.—Founded by Susan Ballou, of Woonsocket, R. I.

TWO BRADLEE SCHOLARSHIPS.—Founded by the late Caleb D. Bradlee, D.D., of Brookline.

TWO GOLDTHWAITE SCHOLARSHIPS.—Founded by the late Willard Goldthwaite, of Salem.

THE SARAH ELIZABETH PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of Brooklyn, N. Y.

TWO LUCIUS R. PAIGE SCHOLARSHIPS.—Founded by the late Lucius R. Paige, D.D., of Cambridge, Mass.

TWO ANN M. PAIGE SCHOLARSHIPS.—Founded by the late Ann M. Paige, wife of the late Rev. Lucius R. Paige, of Cambridge, Mass.

FOUR CATHERINE CONANT SCHOLARSHIPS.—Founded by the late Mrs. Catherine Conant, of Newark, N. J.

The income of five hundred dollars, given by REV. JOHN VANNEVAR, is used in the purchase of books for the Department of Homiletics.

General Information

REGISTRATION

Every student is required to file at the office of the Registrar a plan of study for the term, on the opening day of the term.

The registration is made in triplicate on blanks furnished for the purpose, one copy to be kept on file by the Registrar, one by the Dean, the third to be used, in case of Freshmen, by advisers, and in case of special students and members of the upper classes, by major instructors. Each student also furnishes such data as are required by the Registrar for class lists. Registration is made for the first half-year in accordance with the following schedules:—

I. For students in the School of Liberal Arts, the Crane Theological School, and the Graduate School:

8:30–9:00 A.M. — All students registering for the first time as candidates for A.B. or B.S., or as special students, will pay the registration fee of five dollars at the Bursar's office, unless they have already paid an examination fee.

9–9:30 A.M. — All students receive registration blanks and notice of appointment with major instructor or adviser, at the Registrar's office.

9:10–10:40 A.M.—All students meet their major instructors or advisers in accordance with appointments.

2–4 P.M.—Students obtain the necessary signatures and file program cards at the Registrar's office. The approval of the major instructor or adviser is to be obtained after the separate subjects have been approved by the respective instructors.

On Friday, the second day of the term, all classes meet for

assigned periods of fifteen minutes. See below, under Program.

Regular program appointments are in force on Saturday.

II. FOR STUDENTS IN THE ENGINEERING SCHOOL:

9:30–10:30 A.M.—All students registering for the first time will pay the registration fee of five dollars at the Bursar's office, unless they have already paid an examination fee.

10–12 A.M.—All students in this School obtain blanks and file programs at the Registrar's office.

Members of the three upper classes register in accordance with programs prepared at conferences during the June examination period.

11 A.M. — All Freshmen assemble in the chapel for instructions concerning registration, and information regarding courses.

On Friday, the second day of the term, Junior, Sophomore, and Freshman classes meet instructors for making of divisions and general instruction.

Regular program appointments are in force on Saturday.

Consultations concerning programs for the second half-year are held by appointments with advisers and major instructors during the examination period. On the first day of the second term, between 9 and 12 o'clock, students in all departments file their individual programs.

Recitations begin in accordance with the regular program on Tuesday, the second day of the term.

A registration fine of two dollars is imposed upon students in all departments who fail to register in person during the time prescribed above. This fine must be paid to the Bursar before registration can be permitted. This rule does not apply to students registering for the first time. Students are not recognized as members of classes until they have met all requirements of registration.

During the hours set apart for registration, instructors may be seen for consultation and for approval of plans of study, in rooms to be announced by posted bulletins.

PROGRAM LIMITATION

Plans of study are subject to the following regulations:

I. FOR STUDENTS IN THE SCHOOL OF LIBERAL ARTS AND THE CRANE THEOLOGICAL SCHOOL:

No Freshman shall take a program of more than sixteen term hours for the first half-year; nor shall a program of more than fifteen term hours be taken by any student who has received for the preceding half-year grade L in subjects aggregating three term hours, or grade C in subjects aggregating more than six term hours; except that each student is permitted to take a program of 18 hours in his Junior Year, with the consent of his major instructor. But a student who has failed in a subject may repeat that subject, provided his program is not thereby increased to more than eighteen term hours.

A program in excess of eighteen term hours shall not be allowed except by special permission of the Faculty.

Physical Training is disregarded in the consideration of program limitation.

II. FOR STUDENTS IN THE ENGINEERING SCHOOL:

The Freshman program is prescribed. Permission to vary the Freshman program, to take a program in excess of eighteen term hours, or to take a subject out of course, must be obtained by petition to the Committee on Promotions.

PROGRAM

The unassigned subjects in the five o'clock column of the program are so far as possible assigned at a meeting in Ballou 4 at 12 M. on the second day of the first half-year, and at the same hour on the first day of the second half-year. Every student concerned is required to be present at this time, either in person or by a proxy furnished with a complete tabular program of class engagements. Every instructor concerned is expected to be present in person. These appointments supersede all others. No assignment or change of hour is official except as posted by the Committee on Program.

Any instructor is permitted, after the second full week of a term, to transfer a subject to another program hour, under the following conditions: (a) all students taking the subject must have the new hour free; (b) previous notice must be given to

the Committee on Program: (c) the change, if finally made, must be reported at the College Office.

If such a change can be made in two consecutive years, the subject may be permanently transferred to the new hour.

CHANGES IN REQUIREMENTS

It is the policy of the Faculty not to introduce changes in requirements without due notice in the catalogue, and not to impose additional requirements upon classes already in college. Immediate changes in the curriculum and in the program may occasionally be necessary, and under such circumstances the Faculty reserves the right to make equitable adjustment for students already in college.

PROMOTIONS

All candidates for degrees are classified as Freshmen until they have removed all entrance conditions.

Candidates for the degree of Bachelor of Arts, or Bachelor of Science in the School of Liberal Arts, must have received, for promotion to the Sophomore class, a credit of not less than twenty-seven term hours, and for promotion to the Junior class a credit of not less than fifty-seven term hours. To become a member of the Senior class, a student must have completed all the prescribed work, and have credit for not less than eighty-seven term hours.

Candidates for the degree of Bachelor of Science in the Engineering School must have received, for promotion to the Sophomore class, a credit of not less than twenty-nine term hours; for promotion to the Junior class a credit of not less than sixty-four term hours; and for promotion to the Senior class a credit of not less than ninety-nine term hours.

GRADES OF SCHOLARSHIP

A student's rank is officially recorded by letters, as follows: **A,** excellent; **B,** good; **C,** fair; **L,** passed with low standing; **F,** work incomplete or unsatisfactory; **FF,** complete failure.

The mark **F** imposes a condition which must be removed at a date to be determined by the Committee on Promotions of

the proper Faculty on consultation with the instructor. In case a mark of **F** is not removed at the date thus determined, the entry will be changed to **FF.** The student must then discontinue any dependent subjects which he is taking, and can obtain a clear record only by repeating the subject in which **F** was given. The responsibility for the removal of the condition rests with the student, who is required to make the necessary arrangement with the instructor and to present at the office a statement from the instructor that the work has been accomplished.

Reports of the work of Freshmen are sent to parents after the first term. Reports for the year are sent in July to all.

Except as above stated, marks are not issued from the office.

MAJOR SUBJECTS

Every candidate for the degree of Bachelor of Arts shall choose a major subject before the beginning of the Sophomore year.

A change of major subject may be made not later than the end of the Junior year, by vote of the Committee on Promotions on petition approved by the two major instructors concerned.

A second major subject may be granted not later than the end of the Junior year, under the same conditions.

HONORS

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the School of Liberal Arts or in the Engineering School who shall have attained Grade A in approved subjects aggregating not less than eighteen term hours in a major department, and an average of Grade B in the collateral subjects. Subjects marked in the catalogue with an asterisk (*) will not count for Honors. Those marked with a double asterisk (**) will be counted for Honors only when special requirements, to be defined by the instructors, have been complied with. Final Honors will be

conferred only upon recommendation of the head of the department in which Honors are desired.

HONORABLE MENTION will be made in the Commencement program and in the annual catalogue of a student who has attained, during the two years immediately preceding graduation, Grade A in nine term hours and not less than Grade B in three additional term hours of approved work in one department. Subjects marked in the Catalogue with an asterisk (*) or with a double asterisk (**) are under the conditions explained above as applying to Final Honors.

Candidates for Honorable Mention are expected to report to the Office on or before May 1 the department or departments in which they look for such distinction.

ADMISSION FROM OTHER COLLEGES

Students entering Tufts College, after pursuing study in any other college of equal rank, and being honorably dismissed therefrom, are credited with the number of hours of work actually done toward the requirements of Tufts College, as certified by the proper authorities of the college from which the student comes. Such students must present satisfactory certificates showing the amount and character of work already accomplished, in order to obtain credit on a course of this College.

SPECIAL STUDENTS

Students who are not candidates for a degree, and who wish to pursue a special course of cognate studies, will be admitted to the College, subject to the following regulations:—

1. Every Special Student shall choose a major department, and shall make up a plan of study under the direction and subject to the approval of the major instructor.

2. The student shall satisfy the instructor in each subject included in the approved plan of study that he is able to pursue the work.

3. First-year Special Students are limited to sixteen program hours, and thereafter the same rules apply to them as to regular students.

4. A Special Student, on leaving College, shall be entitled to a certificate giving the grade attained in each subject pursued, and signed by the President and the Registrar.

TERMS AND VACATIONS

Commencement occurs on the third Wednesday in June, and the college year begins on the Thursday following the third Wednesday in September. The year is divided into two terms of eighteen weeks each. There are no college exercises during a recess of four days at Thanksgiving, twelve days at Christmas, four days at the mid-year period, and seven days beginning with the Wednesday evening preceding the nineteenth of April. Columbus Day, Washington's Birthday and Memorial Day are holidays. An examination period of four days is held at the close of each half-year, during which time the daily class exercises are suspended.

Students are required to report in person at the Registrar's office within two hours after the last program appointment of the student preceding each vacation of more than a single day, except at the mid-year period; and within two hours before the first program appointment following such vacation.

This registration must take place during regular office hours, except that students whose first appointments occur at 8 A. M. are permitted to report at the regular meeting-place of the class.

A fine of two dollars will be imposed on each student who shall fail to report as above provided. The regularly appointed registration of studies at the beginning of each term shall be construed as reporting in person.

ABSENCES

Students are required to notify the Registrar at the beginning of an absence from any cause involving more than three consecutive program appointments. This report may be made in advance, and should state the cause of absence and its probable duration. A similar report is to be made before entering upon college work after the absence.

These reports are for the information of the college authorities, and do not excuse the student from chapel attendance, nor from his obligations to the various instructors.

For the first failure to make such a report a fine of fifty cents

shall be levied, and for each subsequent failure a fine of two dollars. In case of the absence of any student organization numbering not less than ten persons, notice may be given for all by one authorized representative.

No student organization shall be allowed to make engagements involving absence from college exercises unless such engagements are approved by the appropriate committee of the Faculty.

A report filed in accordance with these regulations shall not take the place of the required registration before and after vacations of more than a single day.

Absence from Examinations.—Students absent from examinations and requiring special examinations to make up for such absence are charged two dollars for each special examination.

OFFICE HOURS

The President may be found in his office in the morning, from 8.45 to 9.45. The Dean of the School of Liberal Arts is in his office in Ballou Hall, and the Dean of Jackson College in her office in Miner Hall, throughout the forenoon, except for class engagements. The Dean of the Engineering School may be consulted at his office in the Bromfield-Pearson Building, between 11.00 and 1.00, and at other times by special appointment. The office of the Registrar and Secretary is open every morning, from 8.45 to 1.00, and every afternoon except Saturday, from 2.00 to 5.00. The Bursar will be in his office in Ballou Hall during term time, Monday, Wednesday and Friday mornings, from 8.30 to 12.00 o'clock, and on Thursday afternoon from 2.00 to 5.00; and in his office in Miner Hall on Tuesday from 2.50 to 5.00 and Thursday from 8.30 to 12.00.

RELIGIOUS OBSERVANCES

Goddard Chapel, erected in 1882-83, is the gift of Mrs. Mary T. Goddard, as a memorial of her husband, the late Thomas A. Goddard. Morning prayers are held daily, at which attendance is required. The care of the pulpit on Sunday devolves upon the President. A trained choir, composed of men and

women students, sings on Sunday. Attendance upon Sunday service is voluntary.

The RUSSELL LECTURE, established in accordance with a bequest of the late James Russell of Arlington, is delivered before the Trustees, Faculty, and students, on the third Wednesday in November, by either a clergyman or a layman, on a subject prescribed by the testator.

Two subjects are presented, in alternate years.

The subject for 1910 was "*The Importance of Christian Faith and Belief in the Formation of the Character of the Good Citizen and the Good Man.*"

The subject for 1911 is "*The Sufficiency of the Promises of the Gospel to meet the Reasonable Wants of Man both in Time and in Eternity.*"

TUFTS COLLEGE STUDIES

A publication called "Tufts College Studies" has been established, as a means of presenting to the world the results of original work done in the different departments of the College. The numbers, which are issued as material is ready, are distributed to educational institutions and learned societies. The College desires to establish regular exchanges of these Studies with publishing institutions at home and abroad. Correspondence regarding exchanges should be addressed to the Librarian of Tufts College. One volume and two numbers of a second volume of the scientific series have been issued, and a single number of the English series. The editorial board of TUFTS COLLEGE STUDIES for the current year is made up of the President of the College and Professors Knight, Hooper, Kingsley, and Wade.

ATHLETICS

The supervision of all athletic sports is vested in a Board of Directors of Athletics, consisting of nine members, three of whom are appointed from the Faculty, three from the Alumni, and three elected from the undergraduates. This board through its sub-committees controls the expenditure of all moneys, the hiring of coaches, the arranging of games, the eligibility of players, and generally seeks to raise all college sports to a level of genuine usefulness. The Director of the

Gymnasium limits the candidates for college teams to those students who have shown by a physical examination that they are qualified to engage in strenuous exercise.

EXPENSES

The charge for instruction in the School of Liberal Arts is *one hundred and twenty-five dollars* a year, or *five hundred dollars* for the full course whether it be completed in three, four, or more years. A registration fee of five dollars is charged to all students entering the School of Liberal Arts or the Engineering School.

The charge for instruction in the Engineering School is *one hundred and fifty dollars* a year, or *six hundred dollars* for the course.

In the case of students admitted to advanced standing, the fees will be based upon the amount of work done under the direction of Tufts College.

No part of the fees and charges for a term is returnable to the student if he leaves during the term.

Students in the chemical laboratories are charged for breakage, and not more than *four dollars* a term for chemicals used, according to the subjects taken. A fee of *two dollars and a half* a term is required for each laboratory course in the Department of Biology.

Half room-rent, including heat, ranges from twenty-five to ninety-one dollars, in the several dormitories. Students furnish their own rooms. Any special damage done by students to college property is charged in the term bills. Rooms in the college halls will be open for occupancy of students on and after the Wednesday of the week preceding the opening of the college year, and will be closed on the Wednesday after Commencement. Non-resident students in all departments, except the Medical and Dental Schools, are subject to a fixed annual charge of ten dollars.

Students may obtain the use of day-rooms in the dormitories by arrangement with the Bursar, on payment of a moderate fee.

Payment of tuition, room rent, and other charges in all departments of the College is made in advance at the beginning of each half-year, on or before October first and March first.

All college charges are payable to the Bursar, and all arrangements with regard to rooms are to be made with him. The Bursar must certify that all college charges have been met before a student can receive his degree or a letter of honorable dismissal.

The Executive Committee of the Trustees has power to order the suspension or dismissal of a student for failure to keep his bills promptly paid, or for other good and sufficient cause.

By an arrangement with the Somerville Hospital, resident students are assured free hospital treatment in case of illness, during their entire course, at a cost of two dollars a year.

The cost of table board is from $4.00 to $5.00 per week. Other expenses, such as for light, furniture, books, clothing, washing, and incidentals, vary with the economy of each student. Books and instruments required for the courses in Engineering cost from fifteen to twenty-five dollars a year.

The following estimates represent the fixed annual expenses, not including room-rent or the non-resident fee: —

	School of Liberal Arts	Engineering School
Tuition	$125.00	$150.00
Physical Training, including gymnasium and grounds	10.00	10.00
Reading-room	1.00	1.00
Hospital	2.00	2.00
Average board, $4.50 a week (36 weeks)	162.00	162.00
Total	$300.00	$325.00
Registration fee, at the beginning of the course	5.00	5.00

Special students in the School of Liberal Arts pay the initial registration fee and $20.00 a term for each subject of three hours a week or less, together with the usual laboratory fees.

STUDENTS' DRAFTS

The College issues drafts for the use of students in books of twenty-five to fifty dollars. These are freely negotiable in the college community and are becoming so in all banks and stores

in greater Boston. No commission is charged, and the holder is protected from loss or theft. The drafts are for sale at the Bursar's office and at the College Book Store.

INSURANCE

Arrangements may be made through the Bursar's office whereby students in any of the dormitories can insure their personal effects, including books, furniture, and wearing apparel. The cost of such insurance is fifty cents for one hundred dollars for one year. Insurance is placed only in multiples of one hundred dollars; no risk is taken for less than one hundred dollars, and all premiums are payable in advance.

THE DORMITORIES

The halls for the accommodation of students are seven in number. East, West, Dean, Paige, and Curtis Halls are arranged with convenient rooms in suites, are warmed by steam, lighted by gas or electricity, and have good modern plumbing. These halls provide rooms for two hundred and fifty men.

REGULATIONS CONCERNING COLLEGE ROOMS

The annual assignment of rooms will take place in the month of May, at a time appointed by the Bursar, due notice being given upon the official bulletin board. Students occupying any room may retain it for the following academic year by signing a new room-agreement. All rooms not thus provided for will be offered for rent to members of the three upper classes. Rooms not assigned at the annual allotment will be open for choice to members of the entering class, in the order of application.

The right to occupy a college room is given only to the student or students to whom it is assigned: neither exchanges nor transfers of rooms are allowed, except by consent of the Bursar.

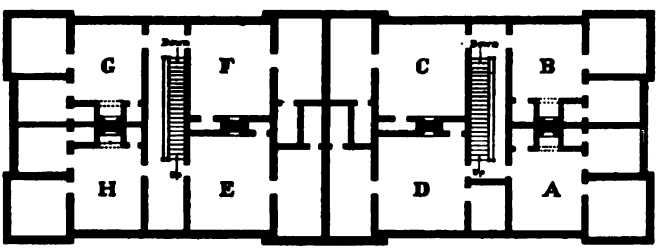
All rooms are for two students; except East 3, 12, 17, 22, 27, and 32, West 16½, and Curtis 4 and 12, and all rooms in Paige, which are for a single student each. Where more than two students occupy a room, the rent will be increased proportionately.

Each student receives his key on payment of fifty cents, which is refunded on the return of the key at the close of the college year.

The prices given for room rent in the lists below are for the whole room during the academic year, and include heat and care. The rooms are lighted with gas; Paige Hall has electricity also. Each suite is metered separately, and the occupants pay for the gas actually consumed. None of the rooms is furnished.

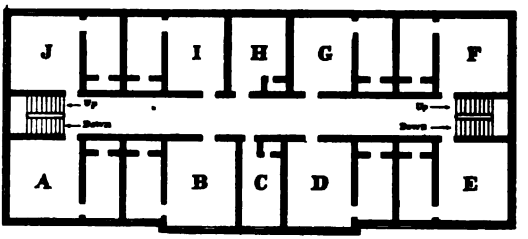
Room rent is in accordance with the following diagrams and prices:—

WEST HALL



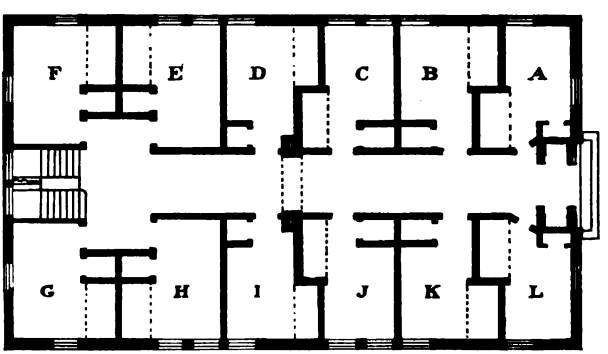
FIRST FLOOR		SECOND FLOOR		THIRD FLOOR		FOURTH FLOOR	
A 1	$128	A 5	$182	A 9	$140	A 13	$96
B 2	102	B 6	128	B 10	118	B 14	80
C 3	92	C 7	100	C 11	96	C 15	74
D 4	128	D 8	172	D 12	140	D 16	96
E 17	128	E 21	172	E 25	140	E 29	96
F 18	92	F 22	100	F 26	96	F 30	74
G 19	102	G 23	128	G 27	118	G 31	80
H 20	128	H 24	182	H 28	140	H 32	96

EAST HALL



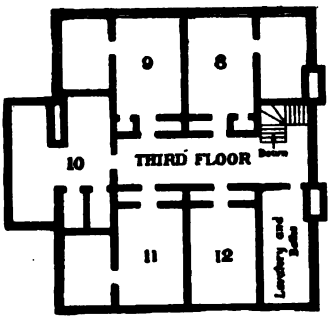
BASEMENT	FIRST FLOOR	SECOND FLOOR	THIRD FLOOR
A	A 6 . . $ 96	A 15 . . $110	A 25 . . $102
B	B 7 . . 92	B 16 . . 110	B 26 . . 100
C	C	C 17 . . $43	C 27 . . $40
D	D 8 . . $92	D 18 . . 110	D 28 . . 100
E	E 9 . . 100	E 19 . . 118	E 29 . . 110
F 1 . . $60	F 10 . . 100	F 20 . . 110	F 30 . . 100
G 2 . . 55	G 11 . . 80	G 21 . . 86	G 31 . . 80
H 3 . . 30	H 12 . . 40	H 22 . . 43	H 32 . . 40
I 4 . . 55	I 13 . . 80	I 23 . . 86	I 33 . . 80
J 5 . . 60	J 14 . . 86	J 24 . . 90	J 34 . . 86

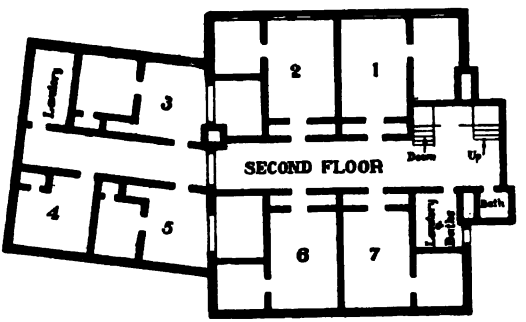
PAIGE HALL



In Paige Hall the plan of each floor is the same. From A to L, the rooms are numbered from 1 to 12 on the first floor; from 13 to 24 on the second, and from 25 to 36 on the third floor. The price for each room is $50.

CURTIS HALL

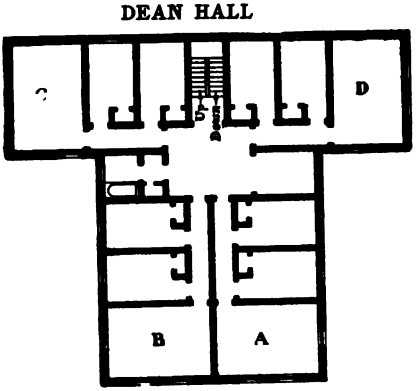




1 . . $80	4 . . $ 50	7 . . $85	10 . . $85
2 . . 80	5 . . 100	8 . . 85	11 . . 85
3 . . 90	6 . . 85	9 . . 85	12 . . 45

Nos. 4 and 12 are single rooms.

DEAN HALL



DEAN HALL

(See previous page for plan)

FIRST FLOOR	SECOND FLOOR	THIRD FLOOR	BASEMENT
A 1 . . $160	A 5 . . $160	A 9 . . $160	A 13 . . $85
B 2 . . 160	B 6 . . 160	B 10 . . 160	B 14 . . 85
C 3 . . 160	C 7 . . 160	C 11 . . 160	C
D 4 . . 160	D 8 . . 160	D 12 . . 160	D

SCHOLARSHIPS

Awards of scholarships are made by the Board of Trustees, on the recommendation of the Faculty. Application for scholarships must be filed with the Secretary on blanks furnished for the purpose, on or before the first day of October; and, if the applicant be a minor, must be sanctioned by his parent or guardian. Grants of aid will apply only for the year in which granted, and will not in themselves be ground for continuance of assistance. If aid is desired during the following year, a new application must be filed.

New students desiring scholarships will be requested to file answers to specific questions on a blank provided for this purpose. This blank must be accompanied by a letter from the principal of the school last attended, containing a statement as to the applicant's character and especially as to his standing as a student. If there appears to be real need and evidence of promise of scholarship, the applicant may be assured of scholarship aid for the first half of the Freshman year, at the rate of $75 per year.

After the first half of the Freshman year, continuance of aid will depend upon the student's need and the grade of his work. Students are required to attain for graduation a grade of at least C in a certain proportion of their work. No student is considered eligible for scholarship aid who has, in the preceding year (or term, if a Freshman) failed to meet this requirement.

Of those considered eligible for scholarship aid, a limited number of those who are at once highest in scholarship and most in need will be assigned scholarships at the rate of $100 per year. Those who are lowest in scholarship and least in need will be

assigned scholarships at the rate of $50 per year. Others may be assigned scholarships at the rate of $75 per year.

The following conditions must be strictly observed by the applicant:

(a) His expenditure must be moderate, and strictly in accordance with his declaration of limited means.

(b) He must be regular in attendance.

(c) He must be guilty of no behavior reflecting upon his moral character or subversive of good order in the College.

Applicants residing in college dormitories will be given preference over those residing at home.

Scholarships are available for those students only whose term bills are fully paid within ten days after the opening of each college term, or after such bills shall have become due. The bills of any student whose connection with the College ceases are due at that time.

The following scholarships have been founded in the College. Except in special cases, when the donor has otherwise stipulated, the Trustees will award scholarship aid in such sums as they may determine in each case.

THREE STATE SCHOLARSHIPS.—Established in accordance with a resolve of the Commonwealth.

FIVE HOWLAND SCHOLARSHIPS.—Established from the income of the bequest of the late Edwin Howland, of South Africa.

FIVE WALKER MATHEMATICAL SCHOLARSHIPS.—Established in honor of the late William J. Walker, M.D., of Newport, R. I., and payable from the income of the Walker Fund.

TWO MOSES DAY SCHOLARSHIPS.—Founded by the late Moses Day, of Roxbury.

THE A. A. MINER SCHOLARSHIP.—Founded by the late Alonzo Ames Miner, D.D., of Boston.

THE REBECCA T. ROBINSON SCHOLARSHIP.—Founded by the late Charles Robinson, LL.D., of Newton.

THE WILLIAM OSCAR CORNELL SCHOLARSHIP.—Founded by William Oscar Cornell, of Providence, R. I.

THE LAURA A. SCOTT SCHOLARSHIP.—Founded by Mrs. Laura A. Scott, of Ridgefield, Conn.

THE STOW SCHOLARSHIP.—Founded by the late Mrs. Eugenia D. Stow, of Meriden, Conn.

THE NORCROSS SCHOLARSHIP.—Founded by James A. and Mrs. Mary E. Norcross, of Worcester.

THE ANDERSON SCHOLARSHIP.—Founded by John M. Anderson, of Salem, in the name of John M. and Rebecca Anderson.

THE TRAVELLI SCHOLARSHIP.—Founded by Mrs. Emma R. Travelli, of Newton.

THE WHITTIER SCHOLARSHIP.—Founded by the late Charles Whittier, of Roxbury, in the name of Charles and Eliza Isabel Whittier.

THE TALBOT SCHOLARSHIP.—Founded by the late Newton Talbot, of Boston.

THE SIMONS MEMORIAL SCHOLARSHIP.—Founded by Mrs. Mary A. Simons, of Manchester, N. H., in memory of Hiram H., Augustus, and Frank Simons.

THE AMASA AND HANNAH L. WHITING SCHOLARSHIP.—Founded by Mrs. Hannah L. Whiting, of Hingham.

THE MARTHA GOLDTHWAITE MEMORIAL SCHOLARSHIP.—Founded by the late Willard Goldthwaite, of Salem.

THE ANDREW J. CLARK MEMORIAL SCHOLARSHIP.—Founded by Mrs. Abbie B. Clark, of Orange.

THE SARAH E. SAYLES MEMORIAL SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE COUSENS SCHOLARSHIP.—Founded by the late John E. Cousens, of Brookline, in the name of John E. and Sarah C. Cousens.

THE BENJAMIN F. SPINNEY SCHOLARSHIP.—Founded by Benjamin F. Spinney, of Lynn.

THE HENRY F. BARROWS SCHOLARSHIP.—Founded by Henry F. Barrows, of North Attleboro.

THE ELLERY E. PECK MEMORIAL SCHOLARSHIP.—Founded by the late Henry Rollins, of Bangor, Me.

THE J. H. MORLEY MEMORIAL SCHOLARSHIP.—Founded by Herbert Small Morley, of Templeton.

THE EDWIN H. CHAPIN MEMORIAL SCHOLARSHIP.—Founded by friends of the late Edwin Hubbell Chapin, D.D., in New York City.

THE THOMAS A. GODDARD MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HOSEA BALLOU, 2D, MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HENRY E. COBB SCHOLARSHIP.—Founded by the late Henry E. Cobb, of Boston.

THE MARY ANN WARD SCHOLARSHIP.—Founded by Sylvester L. Ward, of Boston.

THE MARIA P. WINN SCHOLARSHIP.—Established from a bequest of the late Mrs. Maria P. Winn, of Woburn.

THE JOSEPH D. PEIRCE MEMORIAL SCHOLARSHIP.—Founded by the children and other relatives of the late J. D. Peirce, D.D., of Attleboro.

TWO SIMMONS SCHOLARSHIPS.—Founded by the will of Robert F. Simmons, of Attleboro, in the name of Mary F. and Robert F. Simmons.

THE JOSHUA S. AND HARRIET N. WHITE SCHOLARSHIP.—Founded by the late Joshua S. White, of Pawtucket, R. I.

THE JOHN B. PERKINS SCHOLARSHIP. — Founded by Ann Maria Perkins, of Medford.

TWO BARNARD SCHOLARSHIPS.—Founded by the late Mrs. Caroline M. Barnard, of Everett.

THE BARTLETT SCHOLARSHIP.—Founded by the late Mrs. Nancy Bartlett, of Milford.

THE B. H. DAVIS SCHOLARSHIP.—Founded by the Rev. B. H. Davis, of Weymouth, for the benefit of students of the College of Letters who are preparing to enter the Christian ministry.

THE LATIMER W. BALLOU SCHOLARSHIP.—Founded by the late Latimer W. Ballou, of Woonsocket, R. I.

THE NATHANIEL WHITE SCHOLARSHIP.—Founded by Armenia S. White, of Concord, N. H.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

THE RHODE ISLAND SCHOLARSHIP.—Founded by several persons in Rhode Island.

TWO CHARLES AND FANNIE A. MINER BOOTH SCHOLARSHIPS.—Founded by the late Charles Booth, of Springfield, Vermont.

THE LUTHER GILBERT SCHOLARSHIP.—Founded by the late Mrs. Luther Gilbert, of Roxbury.

THE ORMSBEE CLASS SCHOLARSHIP.—Founded by Benjamin F. Smith, of Pawtucket, R. I.

THE JAMES M. AND EMILY COOK SCHOLARSHIP.—Founded by Henrietta J. States, of Boston.

THE WILLIAM H. SHERMAN SCHOLARSHIP.—Founded by the late William H. Sherman, of Cambridge.

THE DAVIS COOK SCHOLARSHIP.—Founded by the late Davis Cook, of Cumberland, R. I.

THE AUSTIN B. FLETCHER SCHOLARSHIP.—Founded by Austin Barclay Fletcher, of New York City.

THE JONAS CLARK WELLINGTON SCHOLARSHIP.—Founded by Mrs. Sarah C. Fisher Wellington, of Cambridge.

THE MARY L. GROCE SCHOLARSHIP.—Founded by the late Mary L. Groce, of Roxbury.

THE JOHN MURRAY SPRAGUE AND ELIZA FLETCHER SPRAGUE SCHOLARSHIP.—Founded by the late John Sprague, of Lowell.

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THE MARY A. RICHARDSON SCHOLARSHIP.—Founded by Mrs. Mary A. Richardson, of Worcester.

TWO WARREN SCHOLARSHIPS.—Founded by the late Dr. Ira Warren, of Boston.

The following scholarships of fifty dollars each are awarded annually:—

THE A. A. MINER SCHOLARSHIP.—Founded by the late Alonzo Ames Miner, D.D., of Boston.

THE PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of New Rochelle, N. Y.

THE MOSES DAY SCHOLARSHIP.—Founded by the late Moses Day, of Roxbury.

THE JOSEPH H. WALKER SCHOLARSHIP.—Founded by Joseph H. Walker, of Worcester.

THE GEORGE C. THOMAS SCHOLARSHIP.—Founded by George C. Thomas, of Philadelphia, Pa.

THE ALBERT W. SAYLES SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

THE CHARLES A. AND CORNELIA B. SKINNER SCHOLARSHIP.—Founded by the late Rev. Charles A. Skinner, D.D., and Mrs. Cornelia B. Skinner, of Cambridge, Mass.

THE GEORGE STEVENS BALLARD SCHOLARSHIP.—Founded by the late Caroline D. M. Ballard, of Augusta, Me.

The following scholarships are awarded under special conditions:—

THE GREENWOOD PRIZE SCHOLARSHIP IN ORATORY.—Founded by the late Mrs. Eliza M. Greenwood, of Malden, and given to such student as shall have made, as the result of faithful work, together with at least a fair degree of attainment, the greatest improvement in Oratory.

THE WENDELL PHILLIPS MEMORIAL SCHOLARSHIP.—Founded to perpetuate the name, fame, and influence of Wendell Phillips. This scholarship is to be awarded to a student who has completed the Freshman and Sophomore years, and he is to have the benefit of it during the remainder of his course. The beneficiary must be of sound body, high character, and ability in declamation and debate, and must comply with certain special conditions, including participation in a competitive debate of the applicants at the end of the Sophomore year. The specific conditions governing the award of this scholarship may be obtained by those intending to apply therefor from the Secretary of the Faculty, to whom application

should be made early in the Sophomore year. The income of this scholarship is at present seventy dollars.

THE MOSES TRUE BROWN SCHOLARSHIP.—A scholarship yielding fifty dollars annually, founded by the late Moses True Brown, of Sandusky, Ohio, formerly Professor of Oratory in Tufts College, for encouraging and assisting worthy students in the department of Oratory.

THE PRIZE SCHOLARSHIP OF THE CLASS OF 1898.—The sum of fifty dollars is given annually by the Class of 1898 to that Senior who at the end of the Junior year shall have maintained the highest excellence in a course of study broadly and wisely chosen.

THE PRIZE SCHOLARSHIP OF THE CLASS OF 1882. — The sum of one hundred dollars is given annually by the class of 1882 to that member of the College who best exemplifies the combination of ability in athletics and excellence in scholarship.

PRIZES

GODDARD PRIZES.—Three prizes of fifteen dollars each are assigned annually from the Goddard Prize Fund. In 1910-11 these prizes are awarded in the departments of German, History and Public Law, and Physics, under the following conditions:

GERMAN.—A prize for the best examination on the dramatic works and theories of Lessing, by a member of the Junior or Senior class. The preparatory study will call for the reading, in addition to the plays covered in class, of Lessing's earlier dramas and assigned chapters of his "Hamburgische Dramaturgie."

HISTORY AND PUBLIC LAW.—A prize for the best thesis by a member of the Junior or Senior class on a subject to be approved by the head of the department not later than February 20, 1911.

PHYSICS.—A prize to that student in 31-4 or 31-7 Physics whose work during the year is satisfactory, and who shall perform most creditably certain experiments to be designated by the department.

RHETORICAL PRIZES.—Three prizes are awarded as follows:—

A first prize of forty dollars, a second prize of thirty dollars, and a third prize of twenty dollars. The preliminary competition will be open to all candidates for the degree of A.B., B.S., and B.D.

The rhetorical prizes are awarded by a committee, chosen by the Faculty, who judge the work presented by the competitors upon the public day appointed for that purpose. In order

to enter the public competition, candidates, as well as their selections, must be approved by the Professor of Oratory. A preliminary competition is held about ten days before the competition announced in the calendar, at which a committee of the Faculty determine the contestants in the final and public readings.

The foregoing prizes are not awarded, unless in the opinion of the respective judges there is sufficient merit in the several contests to warrant their distribution.

THE CHARLES L. CORBIN PRIZE of $50 for a thesis in Metaphysics, founded by Professor and Mrs. Cushman. Open to students who, having elected Philosophy as a major subject, announce on the first day of October of their senior year the subject of their thesis, and have the thesis completed on April first of that year. The prize may be awarded even if only one student competes for it. It may be withheld if among a large number of theses no one is deemed adequate. The committee of award will be chosen by Professor Cushman from the philosophical faculty of some other institution.

THE DE WITT C. TOMLINSON PRIZE SCHOLARSHIPS.— Founded by Rev. Irving C. Tomlinson of Brookline, Mass.

Two prizes of thirty and twenty dollars respectively, for the two best essays on the subject of "The Ministry of Christ Jesus." The award of prizes must take into account (1) literary merit; (2) evidence of thorough study, clear insight and unbiased understanding of the Biblical records of the ministry of Christ Jesus; (3) the treatment of the public and private ministration to those of his own time; (4) the treatment of the universal application of his ministry to all human needs, and (5) the treatment of the means by which the benefits of his ministry may be appropriated by his followers.

These scholarships are open to Seniors in The School of Liberal Arts, the Engineering School, the Theological School and Jackson College, and to members of the Graduate School. Details as to conditions of competition may be obtained at the Secretary's office.

A regular day has been appointed for the annual announcement of the award of prizes and the assignment of Commencement parts,— Wednesday of the week preceding the Thanksgiving recess.

COMMITTEE ON STUDENT EMPLOYMENT

It is the object of the committee on student employment to inform students concerning positions which may give regular occupation during available hours of term time, or which may be temporarily filled during the vacation periods. Students who wish to make application for any occupation should register their names, with a statement of their qualifications for any special work, with PROF. HARRY G. CHASE, Chairman of the Employment Committee, Room 22, Robinson Hall.

Buildings and Equipment

The College buildings are twenty in number. Ballou Hall contains recitation-rooms, the room of the President and Faculty, and the offices of the Dean, the Registrar, and the Bursar. It contains also the college bookstore. Other buildings are Barnum Museum; Goddard Chapel; Goddard Gymnasium; the Eaton Library; the Chemical Building; the Women's Gymnasium; Middle Hall; three dormitories,—East Hall, West Hall, Dean Hall, for men; Curtis Hall, containing the post-office, class-rooms, and rooms for students; Metcalf Hall, and Start and Richardson Houses, for women students. The Bromfield-Pearson School building is available for technical courses of the College. Two buildings, Packard Hall and Paige Hall, are devoted to the use of the Divinity School. Robinson Hall provides for work in certain of the physical sciences. A power-house has been added, supplying light, heat, and power to the engineering buildings.

The new library building, erected through the gift of one hundred thousand dollars by Andrew Carnegie, is now occupied. At the suggestion of Mrs. Carnegie it is called the Eaton Memorial Hall, in honor of Charles Henry Eaton, '74, former pastor of the Church of the Divine Paternity, New York City.

In the summer the gates in the wire fence surrounding the buildings are closed at 5 P.M. on week days and all day Sunday.

EATON LIBRARY

In all, about sixty-six thousand bound volumes and forty thousand pamphlets are available for use. The College regularly receives more than two hundred periodicals. By favor of the late Senator Hoar the library is a depository for government publications. In the library building a reading-room, maintained by the students, supplies the daily and weekly papers. The student fund also provides a number of the popular and the more technical magazines. Separate rooms have been provided with facilities for the use of students working in the de-

partments of History and Public Law, the Ancient Languages. the Modern Languages, Music, English, the Fine Arts, Philosophy, Political Science, Physics and Mathematics. The average annual increase by donation and purchase, for the last five years, has been about two thousand four hundred volumes.

In the general library is the collection of the Universalist Historical Society (six thousand volumes and several thousand pamphlets), to which, on application, students have free access. In Packard Hall is a selected reference library, for the use of theological students. In the Barnum Museum is the department library of Natural History, numbering more than thirty-three hundred volumes and over eight thousand pamphlets. The Metcalf Musical Library is divided between the music rooms in Goddard Gymnasium, where the scores are kept, and the department room in the Eaton Memorial Library, which contains the collection of English works relating to music. About four hundred representative musical compositions, in form for use upon the automatic instruments in the music rooms, are available to students.

The library is open to all members of the College every day in the week, except Sunday, from 8.00 A.M. to 5.30 P.M.

BARNUM MUSEUM

The Barnum Museum of Natural History was built in 1883-84 by the late Phineas T. Barnum, who gave the College a fund for its maintenance and for the addition of two wings to the central building. One of these wings has been erected. In addition to laboratory rooms, it affords space for the display of the mineralogical and geological collections.

The College is also indebted to Mr. Barnum for the larger portion of its zoological collection. This serves to illustrate all groups of the animal kingdom, and is especially rich in skeletons and mounted skins of mammals, the whole being well adapted for the purposes of instruction. The botanical collection consists of an herbarium containing a representation of the flora of New England, besides many specimens from Europe and the southern and western States. The geological collec-

tion contains representatives of the various types of rocks, as well as of fossils from all formations. The mineralogical collection embraces fine examples of most of the species.

The laboratories and lecture-rooms of the department of Geology are in the main Museum building. The geological laboratory is provided with petrological microscopes, instruments for making rock sections, and other instruments. The mineralogical laboratory possesses the apparatus necessary for the determination of minerals, the analysis of ores, and assay work. The biological laboratories are in the main building and in the newly-erected wing. The laboratories for elementary work are furnished with all necessary facilities, while the laboratory for advanced and research work has all the appliances needed for investigation on the lines of anatomy, histology, and embryology.

The Barnum Museum is open for the inspection of visitors from 8.30 A.M., to 5.00 P.M., every day except Sundays and legal holidays.

GODDARD GYMNASIUM

Goddard Gymnasium, the gift of Mrs. Mary T. Goddard, is well adapted to provide the prescribed class and individual work, and to furnish wholesome physical exercise for all. It is fitted with the apparatus usually seen in a good modern gymnasium, including facilities for light and heavy gymnastics, fencing, wrestling, basket ball, base ball, and the many indoor athletic sports. In the offices is a full set of anthropometric instruments for the physical examination of all students. There is a large gallery, with padded running track twenty-four laps to the mile. The dressing rooms, lockers, and baths are well lighted and commodious. The building is heated by steam and lighted by electricity.

The third floor is occupied by the department of Music.

ATHLETIC FIELDS

The old campus is just outside the gymnasium, and on it are tennis-courts, two base-ball diamonds, a foot-ball field, and a board track. Its close proximity to the Gymnasium is of great advantage.

Tufts College Athletic Field is the large inclosed field on

College Avenue, where inter-collegiate contests are played. It includes two base-ball diamonds, a foot-ball field, and a quarter-mile, twenty-foot cinder track, for track athletics. Tennis-courts and a separate gymnasium are provided for women students, not far from Metcalf Hall.

While athletics are encouraged and generously supported by the College, they are made subsidiary to the requirements of the curriculum, thus safeguarding the best interests of the student.

CHEMICAL BUILDING

The building of the department of Chemistry contains laboratories for general inorganic, organic, analytical, and metallurgical chemistry, a large lecture-room, library, and weighing room, and the private laboratories of the professors in charge. The rooms are provided with all the modern laboratory conveniences, and are well supplied with apparatus and chemicals.

ROBINSON HALL

Robinson Hall is a memorial to the late Charles Robinson, and is designed for the use of the Engineering School. It contains the physical and engineering laboratories, a lecture hall, recitation rooms, and offices of instructors. It is lighted throughout by gas and electricity, and heated from an adjoining steam plant by direct and indirect methods.

The Laboratory of General Physics has a floor area of about twenty-five hundred square feet. It is provided with the necessary apparatus for quantitative work in mechanics, sound, light, heat, electricity and magnetism.

The Electrical Testing Laboratories are well equipped for general electric testing. The apparatus includes various makes of ammeters, voltmeters, wattmeters, galvanometers, resistance boxes, bridges, condensers, and standards of resistance, capacity and electromotive force. A storage battery supplies direct current at any pressure from two to one hundred and twenty volts, and in addition the testing rooms receive both direct and alternating currents from the Power House, and alternating current from the Edison Electric Illuminating Company

Connected with the laboratories is a photometer room of ample size for the photometry of arc and incandescent lamps and provided with apparatus of the latest pattern.

The Transformer Room contains eight new transformers of the General Electric Company; a ten-kilowatt Thomson welder; two five-kilowatt testing transformers, one of ten thousand volts, the other of fifty thousand volts; and a number of smaller and less modern pieces of apparatus.

The Dynamo Testing Room contains a considerable variety of machinery, all electrically driven. Some of the more important machines are a General Electric University Alternator capable of being used as a generator, synchronous motor, or induction motor for one, two, or three phase currents; a high frequency motor generator set with which any periodicity up to one thousand cycles per second can be obtained; two railway motors coupled for testing; two direct-current arc light generators; two and three phase induction motors; a pair of two kilowatt double current generators specially designed for laboratory purposes; and a synchronous motor with phase indicating device.

The Mechanical and Hydraulic Laboratories are in the basement, of which the greater part is above ground, thus assuring good light and freedom from dampness. These rooms contain the testing machines and other apparatus for experimental mechanics, together with the pumps, tanks, and accessories of the hydraulic laboratory.

The Steam Engineering Laboratory contains a small Corliss engine provided with an Admiralty condenser; a 6 x 6 plain slide valve engine used for valve setting and for running a belted air compressor; an oil testing machine; measuring and weighing tanks; apparatus for testing steam engine indicators, gauges and injectors; apparatus for determining the amount of steam or air flowing through orifices; also planimeters, calorimeters, and indicators of several different makes. The steam engines, gas engine, and the boiler, in the power station, are also arranged and equipped for testing.

A carefully constructed experimental model of the Stevenson

Link motion, provided with every possible adjustment, affords ready means for verifying valve diagrams.

THE POWER STATION

The Power Station is equipped with a one hundred and twenty-five horse-power boiler, which supplies heat and power to the engineering buildings. It is also piped and equipped for experimental work in steam engineering; and may be run by forced or natural draft. A forty-horse power Harrisburg Standard engine directly coupled to a direct current General Electric generator; a twenty-five horse-power Sturtevant engine directly coupled to a Mordey alternator, and a storage battery of sixty elements furnishes current for lighting, power, and experimental purposes.

An extension to this building provides accommodation for such of the equipment of the Mechanical Engineering Department as cannot be accommodated in Robinson Hall. This includes a twenty-five horse-power Buckeye engine with an Alden absorption dynamometer; a ten horse-power Columbia gas engine belted to a direct current generator. A four-cylinder thirty horse-power Johnson automobile engine of the Renault type; and a variety of small gas engines. The gas engine equipment also includes an automobile and motorcycle testing plant. The forge shop is also included in this building.

BROMFIELD-PEARSON BUILDING

The Bromfield-Pearson Building contains the offices, recitation rooms, lecture and drafting rooms required for conducting the special courses of the Bromfield-Pearson School. It is also equipped for the departments of Drawing and Mechanic Arts in the Engineering School. Abundant and uniform light is provided, and the drafting rooms are separated from the noise and confusion of the shops. The rooms are lighted by electricity from the adjoining Power Station, and power is furnished to the shop from the same source. One end of the building is used exclusively by the pattern, and machine shops, and both are well equipped with modern tools and facilities for conducting the class work in mechanic arts. Electricity from the college plant is used for lighting and power throughout the building.

JACKSON COLLEGE

Faculty of Jackson College

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT

MRS. CAROLINE S. DAVIES, A.B., DEAN
Professor of Greek

PHILIP M. HAYDEN, A.B., SECRETARY
Professor of French

LIZZIE MAUD CARVILL, A.B., M.D.
Instructor in Physical Training

The instructing staff is identical with that of the School of Liberal Arts of Tufts College.

Standing Committees

ADMISSIONS: Dean Davies, *Chairman;* Dean Wren, Professor Hayden

ABSENCES AND PETITIONS: Dean Davies, *Chairman;* Professor Hayden.

SCHOLARSHIPS AND AIDS: President Hamilton, *Chairman;* Deans Davies, Wren, and Anthony, and Professor Hayden.

CATALOGUE: Professor Hayden, *Chairman;* Deans Davies, Wren, and Anthony, Dr. Briggs.

STUDENT EMPLOYMENT: Professor H. G. Chase, *Chairman;* Dean Davies, Professor Hayden.

PROMOTIONS: Dean Davies, *Chairman;* Professors ———, Wren, Fay, and Metcalf.

ADVISORY COMMITTEE ON WOMEN'S ATHLETICS: Dr. Carvill, *Chairman;* Dean Davies, Miss Ruth Tousey, and a representative of the Students.

Jackson College

Jackson College for Women was authorized by act of the Legislature of Massachusetts in 1910, and was opened on September 22nd of the same year. It is a further step in the development of the work of Tufts College in providing for the collegiate education of women. The beginning was made when Tufts opened all its courses to women on the same terms as to men in 1893. Sixteen years of experience seemed to show that it was possible to do still better work for women than was being done under a system of co-education. Application was made to the Legislature for the necessary charter amendments, and a fully organized and equipped college for women under direction of the Trustees of Tufts College, and under the instruction of the Faculty of Tufts is the result. Jackson College is therefore able to offer to its students a combination of the advantages of a woman's college and a co-educational college with comparative freedom from the peculiar disadvantages of each system.

ADMISSION

The requirements for admission for candidates for A.B or B.S., and for special students are the same as for admission to the School of Liberal Arts. Certificates are accepted from schools on the list approved by the New England College Entrance Certificate Board. Candidates entering by examination may present the examinations of the College Entrance Examination Board given in June, or those given by Tufts College in September.

INSTRUCTION

The courses offered in Jackson College are identical with those offered in the School of Liberal Arts; and are given by the same instructing staff, but in separate divisions, except in some of the higher courses of small registration.

DEGREES

The requirements for the degrees of A.B. or B.S. are the same as in Tufts College. The diploma is countersigned by the President of Tufts College, and bears the seal of Tufts College.

Women who were registered in Tufts College before the establishment of Jackson College may, if they choose, receive the degree from Tufts.

GRADUATE WORK

No graduate courses are offered in Jackson College, but women are admitted to the Graduate School of Tufts College.

EXPENSES

The tuition charges and incidental expenses are the same as in Tufts College. Room rent varies from $40 to $85, according to the location of rooms.

REGISTRATION, REGULATIONS, ETC.

Full information concerning the administration and organization of Jackson College will be found in a special pamphlet to be had on application to the Dean or the Secretary of Jackson College, Tufts College, Mass.

SCHOLARSHIPS

In addition to the Scholarships named below, a certain proportion of the scholarship funds of Tufts College has been set apart for the students of Jackson College. The conditions and form of application are the same.

FIVE JOHN AND LUCY H. STOWE SCHOLARSHIPS.—Five scholarships for women students, founded by the late Mrs. Lucy H. Stowe, of Lawrence.

TWO MARY AND LUTHER GILBERT SCHOLARSHIPS.—Founded by Mrs. Mary G. Knight, of Roxbury, for the benefit of women.

ALPHA OMICRON PI PRIZE SCHOLARSHIP.—Founded by the alumnae of the Tufts Chapter of Alpha Omicron Pi, and given to that woman in the senior class who shall have made the best record in the prescribed work of the A. B. Course.

FUNDS FOR WOMEN

The Woman's Universalist Missionary Society of Massachusetts maintains a fund which is loaned to deserving women students, in sums of one hundred dollars, at four per cent. This fund now amounts to about six thousand dollars.

The Hettie Lang Shuman Memorial Fund was founded by Mr. A. Shuman, who presented one thousand dollars to the College, in memory of his wife. The interest of this fund is annually expended in aiding deserving women students.

The Massachusetts Society for the University Education of Women has at its disposal a small loan fund, and also a limited amount of money devoted to scholarship purposes for regular young women students in the upper classes. Inquiries concerning both of these may be made of the Dean.

BUILDINGS

Miner Hall contains the office of the Dean, class rooms, reception and locker rooms, bookstore, etc.

The Library and laboratories are used in common with Tufts College for the present.

The daily chapel service is held in Goddard Chapel at 8.30.

Dormitory accommodations are provided for the exclusive use of women in Metcalf Hall, Start House, and Richardson House.

Women students cannot be received unless they reside in the dormitories or with their families.

THE MEDICAL SCHOOL

Faculty of the Medical School*

FREDERICK WILLIAM HAMILTON, A.M., D.D, LL.D.
PRESIDENT — Tufts College

HAROLD WILLIAMS, A.B., M.D., LL.D. . . . . 528 Beacon St.
DEAN, *and Professor of the Theory and Practice of Medicine*

FREDERIC MELANCTHON BRIGGS, A.B., M.D. 31 Massachusetts Ave.
Professor of Clinical Surgery and Secretary of the Faculty

JOHN LEWIS HILDRETH, A.M., M.D., LL.D. . . . 14 Garden St.
Professor of Clinical Medicine, Emeritus — Cambridge

ERNEST WATSON CUSHING, A.B., M.D., LL.D. 168 Newbury St.
Professor of Abdominal Surgery and Gynaecology

EDWARD OSGOOD OTIS, A.B., M.D. . . . . 381 Beacon St.
Professor of Pulmonary Diseases and Climatology

HENRY JABEZ BARNES, M.D. . . . . 429 Beacon St.
Professor of Hygiene

CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree
Professor of General Chemistry

MORTON PRINCE, A.B., M.D. . . . . 458 Beacon St.
Professor of Diseases of the Nervous System

FRANK GEORGE WHEATLEY, A.M., M.D. . . . North Abington
Professor of Materia Medica and Therapeutics

HENRY BECKLES CHANDLER, C.M., M.D. . . . 34½ Beacon St
Professor of Ophthalmology

JAMES SULLIVAN HOWE, M.D. . . . . 437 Marlborough St
Professor of Dermatology

EDWARD BINNEY LANE, A.B., M.D. . . . . 419 Boylston St
Professor of Mental Diseases

EDWARD MAVERICK PLUMMER, M.D. 5 Adams St., Charlestown
Professor of Otology

GEORGE HAMLIN WASHBURN, A.B., M.D. . 377 Marlborough St
Professor of Obstetrics

* The names of the Faculty of Medicine, after the President, the Dean, and the Secretary, are arranged in the order of academic seniority. The post-office address is Boston, Mass., unless otherwise indicated.

JOHN JENKS THOMAS, A.M., M.D. . . . . 88 Bay State Road
Assistant Professor of Neurology

JOHN LINCOLN AMES, A.B., M.D. . . . . 70 Chestnut St.
Associate Professor of the Theory and Practice of Medicine

WILLIAM ELISHA CHENERY, A.B., M.D. . . 222 Huntington Ave.
Professor of Laryngology

CHARLES MELVILLE WHITNEY, M.D. . . . . 591 Tremont St.
Professor of Genito-Urinary Diseases

ROBERT WORTHINGTON HASTINGS, A.M., M.D. 45 Kilsyth Rd.,
Assistant Professor of Children's Diseases, and Librarian Brookline

EDMUND CHANNING STOWELL, A.B., M.D. . . . 602 Centre St.,
Assistant Professor of Children's Diseases Jamaica Plain

GEORGE ANDREW BATES, M.Sc., D.M.D. . . . . Auburndale
Professor of Histology

EUGENE THAYER A.M., M.D. . . . 2683 Washington St., Roxbury
Demonstrator of Anatomy

GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D. 6 Mason St.
Professor of Physiology Cambridge

GEORGE WARTON KAAN, M.D. . . . . 419 Boylston St.
Professor of Clinical Gynaecology

CHARLES FAIRBANK PAINTER, A.B., M.D. 372 Marlborough St.
Professor of Orthopedic Surgery

ROBERT MICHAEL MERRICK, M.D. . . 15 Adams St., Dorchester
Assistant Professor of Children's Diseases

CHARLES DAVISON KNOWLTON, M.D. . 574 Warren St., Roxbury
Assistant Professor of the Theory and Practice of Medicine

ALFRED WILLIAM BALCH, PH.G., M.D. . 44 Linden St., Brookline
Assistant Professor of Medical Chemistry and Toxicology

TIMOTHY LEARY, A.M., M.D. . . 17 Grosvenor Road, Jamaica Plain
Professor of Pathology and Medical Jurisprudence

FRANK LEE DRUMMOND RUST, M.D. . . . . 755 Boylston St.
Professor of Ophthalmology

DAVID DANIEL SCANNELL, A.B., M.D. . 366 Commonwealth Ave.
Assistant Professor of Clinical Surgery

HARRY HOMER GERMAIN, M.D. . . . . 416 Marlborough St.
Assistant Professor of Anatomy

OLGA CUSHING-LEARY, M.D. . . 17 Grosvenor Road, Jamaica Plain
Assistant Professor of Pathology and Bacteriology

OTHER INSTRUCTORS

WILLIAM SCHOFIELD, A.M., LL.B. . . . 136 Summer St., Malden
Lecturer in Medical Jurisprudence

WALTER ELMORE FERNALD, M.D. . . . . Waverley
Clinical Lecturer in Mental Diseases

EDWARD LAMBERT TWOMBLY, A.B., M.D. 416 Marlborough St.
Instructor in Clinical Gynaecology

BENJAMIN TENNEY, A.M., M.D. . . . . 308 Marlborough St.
Instructor in Surgery

FRANCIS JOSEPH KELEHER, A.M., M.D. 1345 Center St., Newton
Instructor in Medical Jurisprudence

EDWARD ALLEN PEASE, A.B., M.D. . . . . St. Botolph Club
Instructor in Clinical Surgery

ELMOND ARTHUR BURNHAM, A.B., M.D. . 144 Huntington Ave.
Instructor in Clinical Medicine

JOHN MATTHEW CONNOLLY, A.M., M.D. . . . 419 Boylston St.
Assistant in Children's Diseases

CHARLES BALFOUR DARLING, A.B., M.D. . . 50 Townsend St., Roxbury
Instructor in Abdominal Surgery and Clinical Gynaecology

WILLIAM ROBIE PATTEN EMERSON, A.B., M.D. 657 Boylston St.
Instructor in Children's Diseases

EDWARD NORTON LIBBY, M.D. . . . . 1990 Columbus Ave.
Instructor in Clinical Medicine

HARRY GRAY CHASE, B.S. . . . . Tufts College
Professor of Physics

HENRY MELVILLE CHASE, B.S., M.D. . . . 409 Marlborough St.
Demonstrator of Bandaging and Surgical Technique

RICHARD FITCH CHASE, M.D. . . . . 419 Boylston St.
Instructor in Clinical Medicine and Lecturer on Gastro-Intestinal Diseases

ARTHUR WILLARD FAIRBANKS, M.D. . . . . 591 Beacon St.
Instructor in Neurology

JOHN SHEPARD MAY, A.B., M.D. . . . . 495 Warren St.
Instructor in Obstetrics

FRANCIS DENNIS DONOGHUE, M.D. . . . . 864 Beacon St.
Instructor in Clinical Surgery

THOMAS FRANCIS GREENE, M.D. . . . . 322 Warren St.
Assistant in Obstetrics

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Instructor in Chemical Pathology

HENRY FOWLER RANSFORD WATTS, M.D. . 6 Monadnock St., Dorchester
Assistant in Clinical Medicine

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THEODORE CHARLES ERB, M.D. . . . . 159 St. Botolph St.
Instructor in Obstetrics

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Assistant in Ophthalmology

JOSEPH HENRY SAUNDERS, A.B., M.D. 356 Harvard St., Brookline
Instructor in Clinical Medicine

FRANK PERCIVAL WILLIAMS, M.D. . . . . 419 Boylston St.
Instructor in Rectal Diseases

GUY MONROE WINSLOW, A.B., PH.D. . . . . 145 Woodland Rd., Auburndale
Instructor in Histology

THEODORE CHAPIN BEEBE, JR., A.B., M.D. . 416 Marlborough St.
Instructor in Surgery

WILLIAM HERBERT GRANT, M.D. . . . . 845 Boylston St.
Instructor in Clinical Gynaecology

JAMES CROWLEY DONOGHUE, M.D. . . . . 236 Newbury St.
Instructor in Clinical Medicine

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Assistant in Obstetrics

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Instructor in Clinical Gynaecology

SAMUEL WRIGHT CRITTENDEN, M.D. Austin and Harvard Sts., Dorchester
Assistant in Mental Diseases

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Lecturer in Neuropathology Fitchburg

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LORING BRADFORD PACKARD, A.B., M.D. . . . 61 Walnut Park,
Instructor in Clinical Surgery Roxbury

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Assistant Demonstrator of Anatomy

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Instructor in Clinical Surgery and Assistant Demonstrator of Anatomy

WILLIAM LAWTON THOMPSON, A.B., M.D. . . 14 Harvard Ave.,
Instructor in Obstetrics and Assistant in Bacteriology Allston

HORACE KEITH BOUTWELL, B.S., M.D. . . 416 Marlborough St.
Instructor in Clinical Medicine

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Assistant in Pulmonary Diseases

WINTHROP SHIRLEY BLANCHARD, M.D. . . 480 Columbus Ave.
Instructor in Pathology and Bacteriology

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Instructor in Anatomy

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Assistant in Pulmonary Diseases

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Assistant in Clinical Gynaecology

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Assistant in Clinical Surgery

FRANK EUGENE HASKINS, PH.G., M.D. . . 134 Huntington Ave.
Assistant Demonstrator of Anatomy and Instructor in Pharmacology

WILLIAM RUSSELL MACAUSLAND, M.D. . . . 166 Newbury St.
Assistant in Orthopedics

ARTHUR CUSHING PEARCE, M.D. . . . . 543 Boylston St.
Assistant in Pathology and Bacteriology

DUNLAP PIERCE PENHALLOW, B.S., L.S.S., M.D. . 483 Beacon St.
Assistant in Clinical Surgery

CADIS PHIPPS, M.D. . . . . 483 Beacon St.
Assistant in Hematology

DANA WARREN DRURY M.D. . . . . 101 Newbury St
Assistant in Otology

FRANK HOWARD LAHEY, M.D. . . . . 845 Boylston St.
Instructor in Clinical Surgery

HYMAN MORRISON, A.B., M.D. . . . . 103 Glenway St., Dorchester
Assistant in Hematology

RICHARD HENRY HOUGHTON, M.D. . 308 Sumner St., E. Boston
Assistant in Pulmonary Diseases

CHARLES ALLEN RILEY, M.D . . . . . 30 Harvard Ave., Allston
Assistant in Pulmonary Diseases

GRACE ELIZABETH ROCHFORD, M.D. . . 68 Paris St., E. Boston
Assistant in Bacteriology

JAMES FRANCIS COUPAL, B.S., M.D. . . 15 Gladstone St., Everett
Assistant in Histology

JOSEPH ALOYSIUS MEHAN, M D. . . . 1053 Gorham St., Lowell
Demonstrator in General Chemistry

WILLIAM JOSEPH BRICKLEY, M.D. . 47 Chestnut St., Charlestown
Instructor in Clinical Surgery

ANDREW PAINE CORNWALL, M.D . . . . . 483 Beacon St.
Assistant in Orthopedics

RAYMOND EUGENE GATES, M.D. . . . . 777 Tremont St.
Assistant in General Chemistry

GAETANO PRAINO, M.D. . . . . 419 Boylston St.
Assistant in Clinical Medicine

ELWIN HARRISON WELLS, M.D. . . . . 30 Avon St., Wakefield
Assistant in Physiology

GEORGE RUSSELL CALLENDER, M.D. . . . 416 Huntington Ave.
Instructor in Pathology and Bacteriology

HARRY HOWARD FLAGG, M.D. . . . . 30 Elm St., Charlestown
Assistant in Physiology

JOSEPH EDWARD HALLISEY, M.D. . . 9 Magazine St., Cambridge
Assistant in Hematology

GEORGE FRANCIS McINTIRE, M.D. . . . 5 Dana St., Cambridge
Instructor in Clinical Surgery and Assistant Demonstrator of Anatomy

SOLOMON HYMAN RUBIN, M.D. . . . . 10 Hancock St.
Assistant Demonstrator of Histology

ERNEST WILLOUGHBY GATES, D.M.D. . . . . 777 Tremont St.
Assistant in General Chemistry

LABORATORY ASSISTANTS

Anatomy

WILLIAM E. BROWNE . . . . . Brockton
ELMER S. BAGNALL . . . . . Roslindale
H. G. ARMITAGE . . . . . Haverhill
WILLIAM J. CURRY . . . . . Charlestown
WILLIAM B. GILES . . . . . West Somerville

Physiology

RALPH W. BICKNELL . . . . . Canton, Me.
ALFRED W. BROWN . . . . . Quincy
ERLE D. FORREST . . . . . Boston
WILLIS P. MIDDLETON . . . . . Quincy
STANLEY F. DUNCAN . . . . . Quincy

General Chemistry

EDWARD L. MARR . . . . . Malden
MAURICE V. BROWN . . . . . Norway, Me.
THOMAS E. POWER . . . . . Westfield
FRANCIS G. MINITER . . . . . Medford
RICHARD J. FITZGERALD . . . . . Montpelier, Vt.
JOHN H. T. SWEET, JR. . . . . Hartford, Conn.

Chemical Pathology

MYRON F. CUTLER . . . . . West Somerville
HARRY L. F. LOCKE . . . . . Hudson
WILLIAM D. SPROAT . . . . . Everett

Pharmacology

LAMERT OULTON . . . . . Port Elgin, N. B.
ALBERT W. COLWILL . . . . . Magnolia
FRANK A. O'REILLY . . . . . Lawrence

OTHER OFFICERS

EDMUND WILBUR KELLOGG . . . . . 124 Milk St., Boston
Assistant Treasurer

EUGENE EVERETT SHEPARD . . . 43 Boston Ave., W. Medford
Bursar

LINA A. MAYO . . . . . Milton
Stenographer

LILLIAN M. TATTAN . . . . . Somerville
Clerk to Secretary

STANDING COMMITTEES OF THE MEDICAL SCHOOL

The Dean and the Secretary are members of all Committees, *ex officiis*.

ADMINSTRATION. — The President, Drs. Wheatley, Leary, and Painter.

CATALOGUE. — Drs. Bates, Hastings, and Scannell.

NOMINATIONS. — Drs. Wheatley, Lane, and Whitney.

LIBRARY. — Drs. Otis, Howe, Cushing, and Hastings (Librarian).

COURSE OF INSTRUCTION. — Drs. Leary, Ames, Bates, and Painter.

ADMISSION. — Drs. Leary, Dearborn, Germain, and Professor Hayden.

WOMEN'S ADVISORY COMMITTEE. — Drs. Elizabeth A. Riley, Olga Cushing-Leary, and Edna Weil-Dreyfus.

Student Government Board

With the intention of increasing the teaching efficiency of the School, and of eliminating, so far as possible, disciplinary relations ordinarily existing between instructor and pupil, a Student Government Board has been tentatively established.

The board is composed of nine members, as follows: the four presidents of the classes in the Medical School; the three presidents of the classes in the Dental School; one member at large for the Medical School, to be chosen by the presidents of the Medical classes; and one member at large for the Dental School, to be chosen by the presidents of the Dental classes. The functions are, at present, chiefly advisory. To it are referred questions of discipline, and general matters relating to the interests of the student body.

The Board for the present year is as follows:—

CHAIRMAN

Joseph F. Golden, M '11

SECRETARY

Thomas H. Yates, D '11

MEDICAL SCHOOL:

Alphonse J. Peter, '11
Robert E. Cleary, '12
Richard F. McCoart, Jr., '13
J. Edward McCabe, '14

DENTAL SCHOOL:

Thomas E. Power, '11
Edward A. Kinley, Jr., '12
Arthur J. Quilty, '13

BUILDING OF THE MEDICAL AND DENTAL SCHOOLS

Tufts College Medical School

416 Huntington Avenue

Boston, Mass.

Tufts College Medical School was established in Boston in 1893. It is co-educational, women being admitted upon the same terms as men. In its first year there were six members of the Faculty, and seventeen other instructors, or twenty-five in all. In the session 1910-11, there are thirty-four members of the Faculty and seventy-six other instructors, or one hundred and ten in all. In its first year there were eighty students; in the session 1910-11 there are 390 students. In its first year, there was one clinic connected with the school; in the session 1910-11 there are sixteen clinics. The school was first located in rooms at 188 Boylston Street, where it remained three years, when an enrollment of 174 students made larger quarters necessary. Temporary accommodations were procured for the session 1896-97 in the building formerly occupied by the Chauncy Hall School, while a building was in process of construction on Shawmut Avenue. This building was occupied in the session 1897-98, and it was believed that it would meet the school's needs for a number of years. At the end of three years this building was found to be inadequate to the constantly increasing number of students, and to the constantly increasing requirements of medical education. A new building was erected on Huntington Avenue, and was occupied in the session 1901-02. Increasing requirements have again necessitated more commodious quarters, and during the past summer this building has been enlarged and remodeled at an expense of $50,000. A fourth story has been added, and the building is now completely equipped with every facility for teaching Medicine in accordance with present requirements. There are six lecture rooms, the largest seating 400, the smallest seating 100, and each having the most modern seat-

ing arrangement. On the second, third and fourth floors, extensive laboratories have been provided which give every facility for teaching Pathology, Bacteriology, Physiology, Histology, Chemical Pathology, Chemical Physiology, Neuropathology, Hematology and Pharmacology. Private research laboratories are connected with each general laboratory. The building has been made complete in every respect. It is heated and ventilated throughout by both the direct and indirect system, and is lighted by electricity. The laboratories have been arranged to give the best natural light. The lecture rooms have been planned to combine modern seating arrangements with the best acoustic properties, and are thoroughly equipped with opaque projection and lantern slide apparatus. The building is on the line of the Huntington Avenue Subway cars (except the Roxbury and Dorchester lines). All exercises are conducted at the school building in Boston and at the hospitals.

General Information

CLINICAL ADVANTAGES

Boston, as the largest city in New England, offers unusual facilities to the student of medicine. The amphitheatres of the Boston City Hospital, the Massachusetts General Hospital, and the Massachusetts Charitable Eye and Ear Infirmary, are open to students, and opportunity is thus afforded for witnessing the more extensive surgical operations.

Clinics are held at the Boston City Hospital, Boston Consumptive Hospital, Boston Dispensary, Boston Insane Hospital, Carney Hospital, Free Home for Consumptives, Dispensary for Women, House of the Good Samaritan, Massachusetts Charitable Eye and Ear Infirmary, Massachusetts School for Feeble Minded, Massachusetts State Sanatorium for Treatment of Tuberculosis, Mount Sinai Hospital, St. Elizabeth's Hospital, St. Mary's Infant Asylum, Tremont Dispensary, Women's Charity Club Hospital, and at various private clinics.

SESSIONS OF THE SCHOOL

The annual course of lectures begins on the last Wednesday in September of each year, and continues thirty-six weeks until the second Wednesday in June. The annual course of lectures for 1911-12 will commence Wednesday, September 27, 1911, at 3 o'clock P.M.

VACATIONS

There are no exercises at the School during three days at Thanksgiving, ten days at Christmas, and the week beginning April 2, 1911, nor upon Columbus Day, Washington's Birthday, Patriots' Day and Memorial Day.

OUTLINE OF THE COURSE

The course of study is a graded one, covering four annual sessions. In general the first two years consist of didactic and laboratory work; the last two years are chiefly clinical. During the latter part of the fourth year a certain latitude is allowed in the choice of elective subjects, but the course is otherwise uniform and the required subjects cover thoroughly the general ground of medicine, surgery, and the important special subjects.

For the first three years the school session is divided into two semesters of seventeen weeks each.

First Year

First Semester

Anatomy.—Lectures, recitations, demonstrations, and dissecting, *Twenty-eight hours a week.*

Chemical Physiology. — Lectures, recitations, and laboratory work. *Eleven hours a week.*

Embryology.—Lectures, recitations, and laboratory work. *Three hours a week.*

Elementary Hygiene.—Lectures. *One hour a week, ten lectures.*

Second Semester

Applied Anatomy.—Lectures and demonstrations. *Two hours a week.*

Histology.—Lectures, recitations, demonstrations, and laboratory work. *Nine hours a week.*

Physiology.—Lectures, recitations, demonstrations, conferences, and laboratory work. *Twenty hours a week.*

Second Year

First Semester

Pathology.—Lectures, recitations, demonstrations, and laboratory work. *Twenty-five hours a week.*

Bacteriology.—Lectures, recitations, demonstrations, and laboratory work. *Five hours a week.*

Second Semester

Chemical Pathology.—Lectures, recitations, demonstrations, and laboratory work. *Seventeen hours a week.*

Materia Medica and Therapeutics.—Lectures, recitations, and laboratory work in Pharmacology. *Twelve hours a week.*

Toxicology.—Lectures, recitations, demonstrations, and laboratory work. *Three hours a week.*

Bandaging and Surgical Technique.—Lectures, demonstrations, and section exercises. *Twenty-four hours in all.*

The following subject is given throughout the school year:

Physical Diagnosis. — Lectures, demonstrations, recitations and section exercises. *Forty-eight hours in all.*

Third Year

The following subjects are given throughout the school year:

Theory and Practice.— Lectures, and recitations. *Three hours a week.*

Surgery.—Lectures and recitations (three hours), and two clinical lectures. *Five hours a week.*

Obstetrics.—Lectures, recitations, and demonstrations. (Attendance upon at least four cases of labor is required — see "clinics," below.) *Three hours a week.*

Diseases of Children.—One lecture at the school and one clinical lecture. *Two hours a week.*

Medical Diagnosis (including preliminary work in Clinical Medicine).—Lectures and recitations (three hours a week), and *clinical lectures (two hours a week). *Five hours a week.*

Hygiene and Sanitation.— Lectures. *Two hours a week. Thirty-two hours.*

Ophthalmology.—*Twenty-four lectures.*

Laryngology.—*Twenty-four lectures.*

First Semester

Neurology.—*One *clinical lecture a week.*

* Clinical lectures are given at the hospitals connected with the School.

Second Semester

Neuropathology.—*Sixteen lectures and eight hours of laboratory work.*

Hematology.—*Sixteen lectures and twenty-four hours of laboratory work.*

Pulmonary Diseases and Climatology.—*One clinical lecture* a week.*

Gynaecology.—Lectures and recitations. *Three hours a week.*

Genito-Urinary Diseases.—*Sixteen lectures.*

CLINICS

In addition to the above exercises, the students of the third year attend clinics, in sections, in the following subjects: —

Clinical Medicine;
Clinical Surgery;
Obstetrics (each student is required to take charge of at least four cases of childbirth);
Pediatrics;
Pulmonary Diseases;
Ophthalmology;
Laryngology

The work in clinics averages *twelve hours a week for the year.*

Each student is required to serve one month as assistant at a clinic in the surgical department, and one month as assistant at a clinic in the medical department of an approved hospital.

Fourth Year

The fourth year is divided into three periods: —

The first period (twelve weeks) ends at the Christmas recess. The second period (thirteen weeks) ends at the spring recess. The third period (six weeks) follows the spring recess.

The work of the fourth year is both required and elective. It is essentially clinical and largely in sections.

The required work includes a continuation of the clinical work in the general subjects of medicine and surgery, and a grounding in the essentials of those specialties which have not been studied in the third year. The most of these special subjects are completed before the Christmas recess.

The elective work is a continuation of the work of the required course along selected lines. The student is required to take a certain amount of work, but may exercise his choice as to what he will elect from a large number of subjects offered.

* Clinical lectures are given at the hospitals connected with the School.

Required Subjects

Class Exercises

Clinical Medicine (including Pulmonary Diseases).—Lectures and conferences at the School (two hours), and clinical lectures (three hours). *Five hours a week, thirty weeks.*

Clinical Surgery.—Lectures and conferences at the School (two hours), and one clinical lecture and operations (two hours). *Four hours a week; thirty weeks.*

General Medicine.—Lectures and recitations. *Two hours a week, thirty-two weeks.*

Abdominal Surgery.—Lectures and recitations. *Three hours a week during first period* (*twelve weeks*).

Neurology.—One conference at the School and two clinical lectures each week. *Three hours a week during first period* (*twelve weeks*).

Psycho-Pathology.—Lectures. *Two hours a week during second period* (*twelve weeks*).

Children's Diseases.—Lectures and conferences. *One hour a week during first period* (*twelve weeks*).

Orthopedic Surgery.—Lectures, recitations, and demonstrations. *Two hours a week during first period* (*twelve weeks*).

Otology.—Clinical lectures. *Two hours a week during first period* (*twelve weeks*).

Rectal Diseases.—Lectures. *One hour a week during first period* (*twelve weeks*).

Operative Obstetrics.—*Eighteen hours during the second period.*

Electro-Therapeutics.— Lectures. *One hour a week during first period* (*twelve weeks*).

Clinical Gynecology.—*Clinics (in small sections) *during first and second periods* (*twenty-five weeks*). Conferences *once a week during second period* (*thirteen weeks*).

Medical Jurisprudence.—Lectures and demonstrations. *One hour a week during first and second periods* (*twenty-five weeks*).

Dermatology.—*Clinical lectures. *Two hours a week during second and third periods* (*eighteen weeks*).

Operative Surgery and Surgical Anatomy.—This course is a sub-division of Clinical Surgery, and consists of lectures, demonstrations, and section work in operations on the cadaver. *Three hours a week for twelve weeks* (*second and third periods*).

* Clinical lectures are given at the hospitals connected with the School.

Mental Diseases.—Lectures and clinical visits at hospitals for the insane. *Two hours a week during second and third periods (eighteen weeks).*

Genito-Urinary Diseases. — *Clinics during first period in sections. (*Twenty-four hours — see below.*)*

Clinical Work in Sections

Twelve hours a week are assigned to clinical work in sections throughout the year. This work is given, as far as possible, in close relation to the instruction in each subject, and the time assigned is proportioned to the importance of the subject. The minimum assignment is *twenty-four hours*—in the special subjects of the first period. This is supplemented in the second and third periods by further clinical work in those subjects that the student elects. The clinics in Clinical Medicine and Clinical Surgery extend throughout the year. The other clinics include the subjects of:—

Neurology; Pediatrics; Pulmonary Diseases; Orthopedic Surgery; Abdominal Surgery; Clinical Gynaecology; Otology; Dermatology; Electro-Therapeutics; Genito-Urinary Diseases; Medico-legal autopsies.

ELECTIVE SUBJECTS

Elective subjects are classified according to the amount of time occupied by each course. Twelve hours of lectures or clinics constitute one point. Each student is required to choose 7 points of electives.

The elective courses for the session 1910-11 are classified as follows:

Orthopedics	4 points	Ophthalmology	2 points
Neurology	3 points	Otology	2 points
Laryngology	3 points	Pathological Technique	2 points
Clinical Gynecology	2 points	Gastro-Intestinal Diseases	1 point
Dermatology	2 points	Pulmonary Diseases	1 point
Genito-Urinary Diseases	2 points	Mental Diseases	1 point

The examination in an elective subject lasts one, two, or three hours, according as the course counts one, two, or three points. Orthopedics (4 points) has a three-hour examination.

*Clinical lectures are given at the hospitals connected with the School.

Summary of Time

First Year	1268 hours
Second Year	1177 hours
Third Year	1248 hours
Fourth Year	1003 hours
Total	4696 hours

EXAMINATIONS

1. For Entrance

Examinations for admission may be taken in June at any of the places announced by the College Entrance Examination Board (for a list and application forms, address the Secretary of the Board, P. O. Sub-station 84, New York, N. Y.); or in September at Tufts College, Mass.

2. Promotion

The regular examinations for promotion on the subjects of the First, the Second, and the Third Year, are held at the end of each course.

3. For Graduation

The regular examinations for graduation are held during the Fourth Year at three periods, and follow the termination of each of the three periods into which this year is divided At each of these periods examinations will be held in those subjects, required or elective, which end at that time.

4. Fall Examinations

The regular fall examinations will commence Monday, September 11, 1911, at 10 o'clock A.M., and are given for the following purposes: —

(*a*) For students from other medical schools applying for advanced standing.

(*b*) For the removal of conditions (other than entrance.)

Students intending to take the fall examinations (other than for entrance) are required to notify the Secretary on or before Saturday, Sept. 2, 1911.

In all examinations (except those for entrance) each student must register by signing his name to the registration blank provided for that purpose. If a student fails to register in this manner he shall receive no credit for that examination.

Subjects of Instruction

First Year Subjects

ANATOMY

The course in anatomy is given throughout the first year. During the first half-year there are five lectures and three recitations weekly with the class. In the month of October, thirty hours additional are devoted to demonstrations in Osteology. There are also special demonstrations by the instructors in the difficult parts of the work. In the dissecting room each student is required to dissect three parts, to the satisfaction of the Demonstrator of Anatomy, before taking the final examination. It is necessary for every student to dissect three parts before graduation. Record of attendance and of the quality of the work done in the dissecting room will be kept, and will largely determine the standing of the student in the class.

During the second half-year there are two exercises each week, one hour for applied surgical anatomy and one hour for applied medical anatomy.

PHYSIOLOGY

The course in physiology is given throughout the latter half of the first year. It constitutes half of the entire work required of the student during that period. The course consists of four recitations, four lectures, six hours of laboratory work, and one conference for every student, each week, together with the preparation of a technical written paper, and extra demonstrations. At the end of each month there is an important written examination.

In the recitations, familiarity with the subject-matter of an assigned text-book of physiology, and of the syllabus, is required. The lectures set forth the principles of general and descriptive physiology, and suggest some of its relations to the allied sciences, especially anatomy. In the laboratory the stu-

dent has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function, a specialty being made of an acquaintance with the nature of protoplasm. A strict practical examination may be held at the end of the year in the laboratory. The conferences give each student opportunity to become familiar with the literature on important interesting physiological topics, which are then presented in written reports and freely discussed by the whole class. Record both of the attendance and of the quality of the work done in the laboratory and recitation-room will be kept, and, with the conference, will largely help to determine the standing of the student in the class. In addition, a three-hour written examination covering the entire work of the year is held at the completion of the work, besides the important subsidiary written examinations, monthly, and weekly written tests.

A reviewing course in physics as related to physiology, given by the department of physics in the College of Letters, is a part of this course. This year the lectures and demonstrations are given by Professor Harry G. Chase.

Advanced and research work in physiology will be provided for competent students, by special arrangement with the head of the department. Work in this department is also offered to candidates for the degree of Master of Arts. The constant aim is to adapt the work of each student both to his needs and to his capabilities.

CHEMICAL PHYSIOLOGY

The subjects comprise chemistry of carbohydrates, proteins, fats, and normal blood, urine, feces, gastric contents, etc.

The course includes lectures, recitations, demonstrations and practical laboratory work.

A limited number of systematic exercises in organic chemistry will precede the course. These exercises are preliminary to the study of chemical physiology and chemical pathology, and also include the chemistry of synthetic medicinal com-

pounds which are considered later in the department of Pharmacology.

Records of work done in the laboratory and recitation room will be considered in obtaining the final standing of students.

HISTOLOGY

The work in histology covers the second half of the school year, and is both didactic and practical. The practical work in the laboratory is emphasized. Here the student comes into the most intimate relation with the elements of the body, the legitimate objects of his study. He learns to use the microscope and to manipulate sections. Being required to draw what he sees, he forms a mental picture of the objects of study which he never forgets.

The department aims to bring before the student the latest utterance of the best authorities, and to present the subject from the standpoint of the medical student. It must be obvious that histology, dealing as it does with the tissue elements of the body in their normal condition, is vitally important in the study of pathology, when it is understood that it is morbid changes in these elements which constitute pathological conditions. The student's future study of pathology is kept constantly in mind, and the teaching of the department has a direct bearing upon that end. The department is furnished with microscopes, the use of which, on payment of a small fee, will be afforded to such as are unable to furnish instruments of their own.

Written exercises and recitations will form a part of the course. Ninety hours of laboratory work are required.

EMBRYOLOGY

The subject of Embryology is given in the first half of the second year with three weekly exercises. The work will cover the science so far as to fit the student with knowledge sufficient for his studies in obstetrics and such other departments as may have to do with embryonic conditions. It is intended to give the student such practical features of the subject as will prove adequate for his needs as a student of medicine, without

entering into the many details that tend to confuse and are not essential outside a regular course in biology.

ELEMENTARY HYGIENE

During the first half of the Freshman year, personal hygiene is taught, together with the benefits to be derived from pure and wholesome associations, with the object of developing high moral, mental, and physical qualities. This course consists of twelve lectures.

Second Year Subjects

PHARMACOLOGY

Instruction in pharmacology consists of lectures, recitations, and laboratory exercises, twelve hours a week throughout the second half-year. Especial attention is given to the physiological action of drugs in its relation to their therapeutical application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory course is designed to familiarize the student with all medicinal preparations and processes, and consists of exercises in which the class in sections is led to this result practically.

Prescription writing and the metric system will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

CHEMICAL PATHOLOGY

The course follows the general plan of the first year work in Chemical Physiology. Pathological secretions and excretions are studied in comparison with the normal. Special attention is given to the chemistry and microscopy of urine, feces and gastric contents. These subjects occupy a large part of the laboratory exercises.

Diagnosis of renal, gastric and intestinal diseases from chemical and microscopic findings is fully considered in both lectures and recitations.

OPTIONAL COURSE

Research Work in Chemical Biology. Students must obligate themselves to spend at least a half-year, and write a thesis upon the result of their investigation. This course is similar to that given in the Graduate School for the degree of Master of Arts.

TOXICOLOGY

The lecture and laboratory course in Toxicology is systematic and comprehensive. Students are required to determine the identity of various organic and inorganic poisons in stomach contents, tissues and in food.

In addition to the regular recitations, occasional conferences are held, at which cases of poisoning are discussed.

PATHOLOGY

The work in pathology and bacteriology will occupy the attention of the students during the first half of the second year. The instruction in pathology will consist of lectures, recitations, demonstrations, and practical laboratory work. It will be the aim to develop in the student a thorough knowledge of the causes, course, and results of pathological processes. Daily lectures (five times a week) will be supplemented by daily recitations, based upon a syllabus covering the subjects of general pathology and special pathology.

Demonstrations of gross pathological specimens, obtained from operations and autopsies at the Boston City Hospital, the Massachusetts General Hospital, and other institutions, will be held frequently, as material is obtained. The supply of fresh material is very large, and it is usually possible to illustrate all of the common disease processes and many of the rare lesions, during the time when the class is at work. Instruction in autopsy technique will be given in the amphitheatre of the School.

The work in pathological histology will include a three-hour exercise daily, five times a week. Students will mount and make drawings of sections obtained from human and experimental lesions, comprehending all the important subjects of general and special pathology. Considerable attention will be

paid to surgical pathology. Preserved gross specimens illustrating the lesions studied will be demonstrated in connection with the laboratory exercises.

Written recitations will be held, without notice, at irregular intervals throughout the term. The standard attained by the student in these exercises will influence his final mark in the subject. Final examinations will be held at the end of the year, three hours of written and two hours of practical work. A report on gross specimens may be included.

Microscopes will be loaned to students for a small fee.

BACTERIOLOGY

Bacteriology is taught as a companion study with pathology. As infectious processes are taken up, the bacterial causes are studied in connection with the pathology of the diseases which they produce, in such a way that a comprehensive view of the cause and effect may be obtained. Attention is paid to the technical details of laboratory work. The methods of bacterial action, the elaboration of toxines, the subject of immunity, and the important bearings of asepsis, antisepsis, and disinfection are especially emphasized. Particular attention is also paid to all practical bacteriological tests used in medicine.

The bacteriological laboratory presents adequate facilities for the intelligent demonstration of this subject. In addition to the usual laboratory work, facilities are afforded students for individual work. In connection with the demonstration of gross pathological specimens, a study of bacteria present is made, both by smear and culture. The recitations in this subject will include both oral and written exercises, and practical examinations will be held throughout the year.

The final examination will consist of two hours of written and one hour of practical work. The practical examination will consist of the examination of an unknown specimen, requiring the application of a bacteriological test of clinical value.

PHYSICAL DIAGNOSIS

This is an elementary course in the study of physical signs in health and disease, and is the foundation for the study of

Clinical Medicine. Special attention is given, in the explanation of physical signs, to the principles of physics, and to the facts of anatomy and physiology upon which they are based. The course follows the instruction in Medical Anatomy, part of the course in Applied Anatomy of the first year, and leads to the course in Medical Diagnosis in the third year. The course consists of one lecture a week throughout the second year (thirty-two lectures), and fifteen exercises in sections, chiefly on elementary percussion and auscultation.

BANDAGING AND SURGICAL TECHNIQUE

Bandaging and surgical technique is given to students of the second year, and consists of practical work in applying bandages, dressings, splints, etc. The course is preceded by lectures and demonstrations by the Demonstrator of Bandaging and Apparatus. Upon the conclusion of the lectures, each student receives individual instruction in the subject, and must show himself skilled in this work before completing the course.

During the second semester a series of lectures will be given upon surgical technique.

The course is a part of the work in Surgery.

Third Year Subjects

THEORY AND PRACTICE OF MEDICINE

The work prescribed in the department of general medicine has been carefully planned. As the studies of the second year are intended to prepare the student for the study of the theory and practice of medicine, so this course is intended to prepare for the clinical courses of the fourth year. To this end a systematic series of lectures is offered, including such general diseases as are not considered in the special courses. Two hours a week are devoted to these lectures. They comprise a detailed description of each of the diseases under consideration. The diseases are discussed upon the uniform plan of a description of the affection, its synonyms, history, cause, pathological

changes, symptoms, complications, diagnosis, prognosis, prevention, and treatment. Supplementary to these lectures, a weekly quiz class is held. By such thorough and systematic study of the diseases he is to meet in the clinical work of the fourth year, the student is prepared to appreciate in the fullest degree the varying phenomena of daily practice.

SURGERY

The course in surgery of the third year consists of lectures covering the principles of general surgery, attendance at clinics, recitations, and written quizzes. The instruction in this year prepares the student for the courses of the fourth year in clinical, abdominal, rectal, genito-urinary, gynecological, and orthopedic surgery.

The class attends the lecture in clinical surgery at the Boston City Hospital one morning of each week throughout the school year, and a similar exercise at the Boston Dispensary, one morning each week from October 1 to April 1. At the latter exercise, the time is principally devoted to demonstrating from the case the various conditions which a practitioner meets in general practice. So far as possible, cases are grouped, and one morning of each week is devoted to the consideration of a single subject, with many cases illustrating the condition under discussion.

The class, divided into small sections, attends the regular surgical clinics of the School each week throughout the school year at the Boston City Hospital, the Boston Dispensary, the Carney Hospital and the East Boston Relief Station.

At some time after the course in bandaging and surgical technique, but before graduation, each student must present a certificate stating that he has served satisfactorily as surgical dresser for at least one month in some institution approved by the Faculty. All students who have not already taken the course in bandaging must make arrangements with the demonstrator to complete this course before January 1 of their third year.

LARYNGOLOGY

Instruction in the diseases of the nose and throat is both didactic and clinical. A systematic course of lectures is given to the third-year students in the amphitheatre of the School. These lectures are illustrated with colored diagrams, models, pathological specimens, and the exhibition of instruments. The opaque-projection apparatus is used at the close of each lecture.

Clinical instruction in laryngoscopy and rhinoscopy is given to small sections of the class at the Boston Dispensary. This work is required.

An elective course, mainly practical, is given to the fourth-year students during the last half-year. Special attention is paid to the technique of instrumentation, also to general diagnosis and treatment. By the actual examination of cases the student is made familiar with the diseases the family physician is expected to treat. During this course the students see the more important operations of the nose and throat. Practical lectures are given at the School. The class visits, in sections, the clinics of the Boston Dispensary and St. Elizabeth's Hospital.

NEUROLOGY

The Department of Neurology is under the direction of Dr. Morton Prince, and the courses embrace in their scope required and elective work.

The work of the third year is required and consists of:

(1) Clinical and didactic lectures given at the Boston City Hospital once a week during the first half year by Dr. Prince.

(2) Lectures on the anatomy, physiology, and pathology of the nervous system are given at the Medical School once a week during the second half year by Dr. Tower, supplemented with instruction by sections in the laboratory in the microscopical examination of the normal and pathological nervous system.

OPHTHALMOLOGY

The course in ophthalmology will be of the most practical character possible, being designed to give the general practi-

tioner such knowledge of the subject as is most essential to his practice. The lectures will be given twice a week, the first half of the school year. For clinical work the class will be divided into small sections, preparatory to instruction at the Massachusetts Charitable Eye and Ear Infirmary. The fourth-year elective students will be given personal instruction by all members of the department throughout the school year. Instruction in operative work will be given in small sections by Professor Chandler.

OBSTETRICS

Instruction in obstetrics consists of lectures, recitations, conferences, and clinical teaching. Lectures are illustrated by plates and the use of the manikin. Each student is required to care for at least four cases (clinical instruction being given with one of these), attending them throughout convalescence, and handing in a written report. Some of these reports will be read before the class, and subjected to discussion and criticism by class and instructor.

PULMONARY DISEASES AND CLIMATOLOGY

A chair of pulmonary diseases and climatology was established some years ago, and Dr. Edward O. Otis, Physician to the Free Home for Consumptives, and the tuberculosis department of the Boston Dispensary, formerly president of the American Climatological Association, was elected head of this department. Medical climatology will receive special attention in relation to the climatic treatment of tuberculosis. The methods of sanatorium treatment will be discussed, and one or more sanatoriums visited during the year. "The tuberculosis class," "the day camp," and other modern methods of treating tuberculosis are also given attention.

A limited number of students of the fourth year who desire to assist at the tuberculosis clinic of the Boston Dispensary will have opportunity to do so, and should apply to Dr. Otis. In this department special attention is devoted to pulmonary tuberculosis, concerning which instruction is given, both by didactic and clinical lectures, to the students of the third and fourth

years. Special clinical instruction, with opportunities for the physical examinations of patients, will be given to the students of the third and fourth classes, in small sections, at the clinic for pulmonary diseases in connection with the Boston Dispensary, the out-patient department of the Boston Consumptive Hospital, and the Mt. Sinai Hospital. The detection, treatment, and prevention of pulmonary tuberculosis will be thoroughly studied in this class.

GENITO-URINARY DISEASES

The required course in Genito-Urinary Diseases will commence in the second half of the third year, when the didactic lectures in this subject will be given. Clinical instruction will be given during the first period of the fourth year.

GYNECOLOGY

Instruction in gynecology is given both by lectures and clinical teaching. Lectures are given to the third-year students twice a week during the second term. Once a week a quiz is held on the lectures.

DISEASES OF CHILDREN

The course in Diseases of Children covers a year and a half. During the first half of the third year didactic instruction is begun at the school, and is supplemented by clinical lectures and elementary clinical work, such as history-taking and physical examinations at the Boston Dispensary. This clinical work is enlarged during the second half of this school year. All the common diseases of childhood and many of the uncommon ones are seen at the bedside and in the hospital. Contagious diseases are presented to sections at the South Department of the Boston City Hospital. Problems of feeding and nutrition, suggested in out-patient work, are solved in detail in the food laboratory and at the side of the patient at St. Mary's Infant Hospital.

During the first part of the fourth year the study of the more unusual features of the subject is carried on in carefully

arranged section work, clinics and conferences, exercises being held at the school, the Boston Dispensary, the Tyler Street Hospital, and St. Mary's Infant Hospital.

MEDICAL DIAGNOSIS

The instruction in Clinical Medicine during the third year is given under the head of Medical Diagnosis. The course continues throughout the third year. Two hours a week at the school are devoted to lectures and recitations. This is supplemented by two clinical lectures at the Boston City Hospital, illustrating the subject. In addition the class, in sections, attends ward visits and medical clinics. An important part of this clinical work is given under the supervision of the Department of Pulmonary Diseases. The work in this course is closely correlated with the course in Theory and Practice.

HYGIENE AND SANITATION

Hygiene and sanitation are taught during the third year.

The principal subjects of the course are air, water (public and private), and food supplies.

The transmissible diseases, and their epidemiology, industrial hygiene, and the inspection of work-shops and factories, house construction, heating, ventilating, and plumbing, care of family wastes, and the disposal of sewage.

Railroad sanitation, military and naval hygiene, quarantine, disinfection and fumigation. National and State laws relative to health officers, and the protection of the public health.

The inspection of schools.

Burial of the dead, and vital statistics.

This course is in harmony, as to time and subjects, with that recommended for a standard curriculum for medical colleges by the Council on Medical Education of the American Medical Association in the report on hygiene.

HEMATOLOGY

The course in hematology consists of sixteen lectures and twelve two-hour laboratory exercises, — forty hours in all for

each student during the second semester of the third year,—with occasional clinical lectures at the Boston City Hospital. It is given as a sub-department of Clinical Medicine, and it is the aim to adapt it to the needs of the future practitioner. The lectures deal with diseases of the blood from a clinical as well as from a laboratory standpoint. The first laboratory exercises consist of preliminary instruction in the technique of blood examination, followed by practical work in blood pathology. A permanent collection of some three thousand microscope slides and a number of excellent wall-charts are also available.

Fourth Year Subjects

CLINICAL MEDICINE

The aim of the work in Clinical Medicine is to give the student a practical acquaintance with disease. The instruction in this department begins with Medical Anatomy (part of the course in Applied Anatomy), in the second semester of the first year. Then follow the course in Physical Diagnosis in the second year and the course in Medical Diagnosis in the third year. The fourth-year course in Clinical Medicine is a continuation and farther development of this work.

The instruction consists of two clinical lectures at the Boston City Hospital, one clinical lecture (Pulmonary Diseases) at the Boston Dispensary, and two hours at the School. One of these latter hours is given to conferences on cases which the students have studied, and the other is given partly to instruction in practical therapeutics and dietetics, and partly to exercises in conjunction with the Department of Pathology on clinical pathology, — the clinical and pathological study of actual cases.

In addition, abundant opportunities for clinical study are offered, in ward visits and other medical clinics. This instruction is given chiefly at the Boston City Hospital, the Boston Dispensary, and the Free Home for Consumptives. The work

in Pulmonary Diseases in the fourth year is regarded as part of the course in Clinical Medicine.

The marks throughout the various courses of the Department of Clinical Medicine are based on practical work and the report of cases, as well as on written examinations.

CLINICAL SURGERY

The work in clinical surgery for the fourth year consists of lectures, conferences, attendance at clinics and operations.

There is one amphitheatre clinic a week at the Boston City Hospital throughout the school year, at which cases are presented, examined, and fully discussed before the whole class. The material at hand in the Hospital presents in the course of the year opportunity to illustrate a very wide range of general surgery. Two supplementary lectures are given at the School, giving a systematic review of the field of clinical surgery.

Students of the fourth-year class in small sections attend the surgical clinics at the Boston City Hospital, the Boston Dispensary, the Carney Hospital, and the Charity Club Hospital from October 1 to May 15. At these exercises students examine the various cases and report to the instructor, in this way becoming practically familiar with diagnostic methods. Students in this class also have opportunities of administering ether and assisting at operations.

Working positions as surgical out-patient dressers are open to the students at the City Hospital, Boston Dispensary, and elsewhere, and this opportunity for practical work is taken advantage of by many students. Opportunity is offered for a few picked men to serve as surgical dressers in the house, at the Boston City Hospital, for one or two months during the school year.

The case system of teaching Clinical Surgery has been substituted for the older conference method. At this exercise (held once a week) each student is supplied with a typewritten copy of an actual surgical case, in which all the essentials as to history, physical examination and additional data are supplied. The students are called upon for differential diagnosis

and are obliged to defend their opinions with sound reasoning. At the proper time the actual diagnosis is given, and the prognosis and treatment are then discussed in detail.

Experience has shown that such exercises conducted with enthusiasm produce similar enthusiastic student co-operation, and tend professionally to correct and sound thinking along surgical lines.

OPERATIVE SURGERY AND SURGICAL ANATOMY

The work in operative surgery has been enlarged by the addition of a course in surgical anatomy, given by the department of anatomy in conjunction with the department of clinical surgery. This course, which includes three exercises a week for five weeks, consists of demonstrations of surgical landmarks upon the living model, the skeleton, and the cadaver, and a review of anatomy in general. Especial emphasis is laid upon that part of anatomy which is important in operative surgery.

Regional anatomy is demonstrated, and at the conclusion of the review given by the department of anatomy the important surgical operations of the region under discussion are demonstrated by members of the surgical staff. Thus surgery of the neck is first treated from the standpoint of surgical landmarks, pointed out upon the living model, the skeleton, and the cadaver. The surgical anatomy of the neck is then demonstrated on the cadaver, and at the conclusion of these exercises by the Department of Anatomy, the important surgical operations of the neck are demonstrated by members of the Department of Surgery.

The same course is pursued with all parts of the body, and at the conclusion of the anatomical teaching concerning any region, the special operations of that region are demonstrated by members of the surgical staff.

At the conclusion of the course the class is divided into small sections, and each section performs the various operations upon the cadaver in the dissecting room. Each section is supervised by an instructor.

The course in operative surgery and surgical anatomy as above outlined is a part of the required work in clinical surgery.

NEUROLOGY

The Neurology for the fourth-year class is both required and elective. The required courses consist of clinical and didactic lectures by Dr. Prince and Dr. Thomas; clinical exercises by Dr. Fairbanks, in sections, at which instruction is given in methods of examination of the patient, and diagnosis of the diseases of the nervous system; and clinical conferences, at which the student makes a written report of a case which he has himself studied and diagnosed. The report is then discussed by the class and the instructors.

The elective course consists of clinical exercises by Dr. Thomas. In these clinical exercises the student has an opportunity to examine and study the patient for himself, thus becoming experienced in the methods of examination, and acquainted with nervous diseases as present in the subject.

The lectures and exercises are given at the Boston City Hospital during the first half of the school year.

PSYCHO-PATHOLOGY AND PSYCHO-THERAPEUTICS

The course in Psycho-pathology and Psycho-therapeutics is given to the fourth-year class under the direction of the department of Neurology.

Among the subjects included are: the mechanism of memory; integrative action of the nervous system; emotion; hypnotism; suggestion; the sub-conscious, co-conscious and unconscious; hysteria; neurasthenia; obsessions; dissociations of personality; and the principles of psycho-therapeutics. These are only a few of the subjects treated.

MENTAL DISEASES

Instruction in mental diseases will be afforded by a course comprising didactic and clinical lectures, to be given weekly from January to the middle of May. Ten or more clinics will be held at the Boston Insane Hospital, where a large number

of patients are received annually. Two clinics will be given also at the Massachusetts School for Feeble-Minded, at Waverley. It will be the aim of this course to allow the students to become familiar with the prevalent forms of mental trouble, the early symptoms of insanity, and with the methods of commitment. Especial attention will be given to mental defects in children.

PATHOLOGICAL TECHNIQUE

The course in pathological technique is offered to students of the fourth year. It is intended to develop in the student a special familiarity with the diagnostic tests which are used in pathological and bacteriological work. The course will include studies of pathological products from the standpoint of rapid diagnosis, as the preparation of free-hand and frozen sections, together with the rapid celloidin imbedding of fresh tissue; training in methods of description and the preparation of protocols; special bacteriological tests, notably the opsonin test and the preparation of vaccines; the study of agglutination by Wright's method; inoscopy, cytodiagnosis, etc.

This course is expected to be of particular value to students who intend to obtain house-officerships in small hospitals where regular pathological appointments are not made.

ABDOMINAL SURGERY

Instruction is given in abdominal surgery, including appendicitis, hernia, and the major operations on the female pelvic organs, by two lectures and one quiz weekly to fourth-year students during the first term, and by demonstrations on the cadaver, clinical conferences, and attendance of subdivisions of the class at operations.

MEDICAL JURISPRUDENCE

In most institutions instruction in legal medicine is limited to those subjects which prepare the graduate for the work of the medical examiner or coroner, in spite of the fact that only a small number of practitioners ever have opportunity to exercise these functions.

The course which will be offered to the fourth-year class is intended to be broader in scope and it will include:

Instruction in the rights and duties of the physician in court, by Justice William Schofield, of the Superior Bench of Massachusetts.

A study of the legal relations of the physician to the public, to the profession, and to his patients, by Dr. F. J. Keleher, member of the Boston Bar.

Instruction in the duties of the medical examiner, illustrated by practical demonstration of medico-legal cases, by Dr. Leary.

ORTHOPEDIC SURGERY

The work in orthopedic surgery consists of one lecture, four clinics, and one quiz each week of the first half-year, and of two exercises a week at the Carney Hospital during the second half-year, for those electing the subject. The work of the second half-year consists of practical exercises in diagnosis and treatment in the out-patient department, and of ward visits, with opportunity to see the operative work, especially the orthopedic surgery of the adult.

OTOLOGY

Instruction in otology consists of lectures on the anatomy, physiology, and pathology of the ear, at the Massachusetts Charitable Eye and Ear Infirmary. These lectures are illustrated by Politzer's charts of the human ear, models, anatomical specimens of the temporal bone, bone-corrosion preparations, and microscopical sections of the organ of hearing.

Clinical and practical instruction in otology is given to small sections of the class at the close of each lecture. The students witness the examination and treatment of patients, are invited in class sections to be present at the major operations upon the ear, and to accompany the aural surgeon in his daily rounds through the wards.

An elective course for the fourth-year students consists of clinical work at the Massachusetts Charitable Eye and Ear Infirmary and the Carney Hospital.

DISEASES OF THE RECTUM

The course in diseases of the rectum will consist of weekly lectures during the first half-year at the School, and clinical instruction every morning at the rectal department of the Boston Dispensary. Each student will have ample opportunity to examine patients, and in suitable cases to apply treatment. Especial attention will be paid to so-called "office treatment" of this class of diseases.

DERMATOLOGY

The instruction in dermatology will consist of weekly lectures, to the fourth-year students from January to April. Also, from January to June, there will be three weekly clinics at the Boston Dispensary, where cases of skin diseases will be shown to the class, with an opportunity for each student to examine the cases personally.

GENITO-URINARY DISEASES

Clinical instruction in genito-urinary diseases is given at the genito-urinary department of the Boston Dispensary. All the students of the fourth year are required to attend the clinic in sections permitting individual instruction, during the first semester, and are taught the chief points of modern genito-urinary technique. Students electing this course receive additional instruction in sections during the second semester. As the number of patients attending this clinic is very large, each student has an opportunity to see many cases of genito-urinary diseases and to become familiar with their diagnosis and treatment.

ELECTRO-THERAPEUTICS

The course in electro-therapeutics given to the fourth-year students will consist of twelve lectures, with occasional quizzes. It will include a brief review of the principles of electro-physics, the nature, methods of production, and physiological action of the various forms of electrical energy, together with a brief discussion of their therapeutic uses and limitations.

CLINICAL GYNAECOLOGY

The first essential being the ability to make an exact diagnosis, the students of the fourth-year class, in sections of two students only, are given abundant opportunity to make physical examinations under proper supervision. The daily clinics (morning and afternoon) of The Dispensary for Women, of the Boston Dispensary, the Tremont Dispensary, Carney Hospital, St. Elizabeth's Hospital, and Mount Sinai Hospital provide a course in methods of diagnosis and treatment superior to any other in New England. Adequate provision is also made for students to witness operations in plastic and major pelvic surgery.

CLINICAL TUBERCULOSIS

A special elective course in clinical tuberculosis is given to the fourth-year class by Professor Otis during the months of January, February, and March. It will pay special attention to the early stages of the disease, and will deal generally with the diagnosis, prognosis, treatment, and prophylaxis of pulmonary tuberculosis. There will be at least twenty-five clinical exercises, and a required essay, or examination.

Preparation

Prospective students who have completed the preparation required for admission to the Medical School are advised, if they feel able to give the necessary time, to take a year of college work before entering upon distinctively medical studies, in order to obtain a more thorough foundation and to become familiar with the laboratory methods which form the basis of the work of the first two years of the medical course.

The School of Liberal Arts of Tufts College offers to such students a special course indicated below. This course is open only to students who have fully met the requirements for admission to the Medical School, being supplementary to the regular preparation, and not in any sense a substitute for it.

1. Biology 3. Two lectures and four hours of laboratory work each week upon the structure and development of selected vertebrate types. The forms studied in the laboratory are the dogfish, salamander, and cat, with some microscopic work on embryos and tissues, and the study of skeletons of several animals.

2. Chemistry 1. Two lectures and six hours of laboratory work each week. The lectures cover general theoretical and descriptive inorganic chemistry. The laboratory work is devoted to the principal elements and their compounds.

3. English 1 and 2. Three hours a week of instruction in composition and rhetoric.

4. German or French.

5. Elective.

TEXT-BOOKS

[For the session 1910-11]

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy. — Piersol, Gray, Morris, Cunningham, Eisendrath, Sabotta, McMurrich, Spatheholz, Cunningham's Manual of Dissection.

General Chemistry.—Simon's Manual of Chemistry, Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis.

Histology.—Syllabus, Böhm and Davidoff, Stohr, Ferguson, Bailey, Schäfer's Essentials.

Physiology.—Syllabus, Dearborn's Text-Book of Physiology, Howell, Landois, Verwern, Schäfer, Morat, Hutchinson, McFarland's Biology.

Bacteriology.—Syllabus, Park and Williams, Hiss and Zinsser, Jordan, Muir and Richie, McFarland, Abbott, Lehmann and Neumann, Sternberg.

Chemical Pathology.— Hammarstein's Physiological Chemistry, Well's Chemical Pathology, Ogden's Clinical Examination of the Urine, Purdy's Practical Urinalysis and Urinary Diagnosis, Simon's Physiological Chemistry, Wood's Chemical and Microscopical Diagnosis, Holland's Medical Chemistry and Toxicology.

Materia Medica and Therapeutics.—Hare, Sollman, Cushing-Thornton's Dose Book and Manual of Prescription Writing.

Pathology.—Syllabus, Stengel, Ziegler, Coplin, Mallory and Wright's Technique, Durck's Pathological Histology, Cohnheim, Green, American Text Book.

Physical Diagnosis.— DaCosta's Physical Diagnosis, Ander's Physical Diagnosis.

Toxicology.—Taylor's Medical Jurisprudence, Peterson and Haine's Legal Medicine and Toxicology, Brundage's Toxicology.

Children's Diseases—Holt's Diseases of Infancy and Childhood, Kerley's Treatment of Children's Diseases, Cotton's Medical Diseases of Infancy and Childhood, Thompson's Clinical Examination and Treatment of Sick Children.

Gynaecology.—Dudley, Kelly, Reed.

Hematology.—Cabot's Clinical Examination of the Blood.

Hygiene.—Bergey, Principles of Hygiene; Egbert's Hygiene and Sanitation.

Laryngology.—Coakley, Knight, Kyle, Shurley, Ballenger.

Medical Diagnosis.—Musser's Medical Diagnosis.

Obstetrics.—Edgar, Hirst, Grandin, Jarman and Marx.

Ophthalmology.—Fuch, Swanzey, May.

Practice of Medicine.—Osler, Tyson, Forscheimer's Prophylaxis and Treatment, Anders's Practice of Medicine, Thompson, Strümpell, Eichhorn.

Pulmonary Diseases.—Babcock's Diseases of the Lungs, Otis' The Great White Plague, Otis' Treatment of Tuberculosis in Musser and Kelley's Treatment, Kleb's Tuberculosis, Bonney's Tuberculosis and Its Complications.

Surgery.—Brewer, International Text-book, American Text-book, Stimson on Fractures and Dislocations.

Abdominal Surgery.—McGrath, Gould, Grieg-Smith.

Clinical Gynaecology.—Dudley, Garrigues.

Clinical Medicine.—Osler's Practice of Medicine, Wood and Fitz's Practice, Ander's Practice of Medicine, Forscheimer's Prophylaxis and Treatment.

Clinical and Operative Surgery. — Brewer, International Text-book, American Text-book, Wharton and Curtis, Roberts, Stimson on Fractures and Dislocations, Scudder on Treatment of Fractures, Binney's Operative Surgery, Treves's Surgical Anatomy, Crandon's Surgical After-Treatment.

Dermatology.—Hyde and Montgomery's Diseases of the Skin, Duhring, Stelwagon, Crocker, Kaposi, Besmer.

Diseases of the Rectum.—Kelsey, last edition; Tuttle, Gant, second edition.

Genito-Urinary Diseases.—Keyes, Morton, Taylor, Greene-Brooks.

Mental Diseases.—Brower and Bannister's Practical Manual of Insanity, Diefendorf's Clinical Psychiatry, Berkely's Mental Diseases, Wood's Reference Handbook, article on Insanity, Clouston's Clinical Lectures on Mental Diseases, Tuke's Dictionary of Psychological Medicine, E. Regis's Practical Manual of Mental Medicine, Wm. A. White's Outlines of Psychiatry.

Neurology.—Oppenheim, Church and Peterson.

Orthopedics.—Whitman's Orthopedic Surgery (fourth edition), Bradford and Lovett, Goldthwait, Painter and Osgood.

Otology.—Bacon's Manual of Otology.

Medical Dictionary.—Gould, Dunglison, Dorland.

Requirements

FOR ADMISSION TO THE FIRST-YEAR CLASS

Candidates for admission to the Medical School must have received adequate preparation in certain subjects falling in two groups, known respectively as the Primary and the Secondary Group. A unit represents a year's study in any subject in a secondary school, representing approximately a quarter of a full year's work.

The Primary Group

Elementary English, 3;
Elementary Latin, 2;
Elementary Physics, 1;
Elementary Algebra, 1½;
Plane Geometry, 1.

The Secondary Group

Elementary

Greek, 2
Latin, 2
French, 2
German, 2
History, 1
Chemistry, 1
Physics, 1
Botany, 1
Zoology, 1
Geology and Geography, 1
Mechanical Drawing, 1
Freehand Drawing, 1
Shop Work, 1
Economics, ½

Intermediate

Latin, 1
French, 1
German, 1

Advanced

Greek, 1
Latin, 1
French, 1
German, 1
History
Algebra, ½
Trigonometry, ½
Solid Geometry, ½

Candidates are required to present all the subjects of the Primary Group and a selection of subjects from the Secondary Group aggregating 3 units, according to the valuation indicated above. One of these units must be that representing Chemistry. Note: Beginning with the class entering in 1912, candidates will be required to submit subjects from the Secondary Group aggregating 5½ units.

A detailed statement of the requirements in each subject will be found in the section devoted to admission requirements at the beginning of this catalogue. Candidates may take examinations of the College Entrance Examination Board, June 19th to 24th, 1911, at Tufts College or elsewhere. Full information concerning application for such examination may be had by addressing the secretary of the Board, Post Office Sub-Station 84, New York. Examinations will be given in September at Tufts College, according to the schedule published in the calendar at the beginning of this catalogue. An examination fee of $5.00 is payable at the time of examination, but candidates who subsequently enter the Medical School will not be required to pay the matriculation fee of the first year.

Admission Without Examination

Graduates of colleges, universities, and high schools approved by the New England College Entrance Certificate Board, and students holding Regents' diplomas showing a four-year course in a high school in New York State, are admitted without examination except in Chemistry. All candidates are required to obtain credit in this subject by examination. A certificate of proficiency in Latin and Physics is required.

Candidates from schools west of New York may present full statements of their record and the courses pursued, for consideration by the Committee on Admission.

Advanced Standing

Allowance is made for time spent in the study of medicine in other accredited medical schools, but no credit is given for ex-

aminations passed in other schools, except by special vote of the Committee on Instruction.

Students presenting evidence of a course equivalent to the course in general chemistry given in the first year in this School are regarded as having anticipated this subject, upon passing the fall examination.

PROMOTION

To Second-Year Class

Students who have passed a majority of the first-year examinations, and who have removed all entrance conditions, are admitted to the second-year class.

To Third-Year Class

Students of the second-year class who have passed all the first-year examinations, and a majority of the second-year examinations, are admitted to the third-year class.

To Fourth-Year Class

Students who have passed all the studies of the first and the second year, and a majority of the studies of the third year, are admitted to the fourth-year class. No other students are admitted to this class, except by special vote of the Faculty.

GRADUATION

For the Degree of M.D.

Candidates for the degree of Doctor of Medicine must have fulfilled the following requirements:—

1. They must furnish certificates that they are twenty-one years of age.

2. The Faculty must be satisfied of their good moral character.

3. They must have attended four full courses of medical study at some accredited medical college, the last of which shall have been at this School as members of the fourth-year class, and no two courses in the same twelve months.

4. They must have passed all the required examinations,

and have performed the required amount of laboratory and clinical work.

5. They must have satisfactorily dissected one-half of the body, under the direction of a demonstrator of anatomy.

6. They must have paid all fees.

CHANGE OF REQUIREMENTS

The Faculty reserve the right to change all requirements without further notice.

HONORS

Students who have attended four full courses of lectures at this School, and have obtained an average of ninety per cent. in their examinations, shall be eligible to "*summa cum laude*."

Students who have obtained an average of eighty per cent. shall be eligible to "*cum laude*," in connection with the degree received.

STANDING AND CERTIFICATES

At the end of the session a statement of his standing for the year is sent by mail to each student. These certificates must be preserved for future reference. No marks will be sent or credit given to any student who is in arrears with the Bursar.

FEES AND EXPENSES

A matriculation fee of *five dollars* is payable each year.

A charge of *one hundred and fifty dollars* for tuition is payable in advance.

If desired, the tuition may be paid in instalments, in which case an additional charge of five dollars is made, and the fees are then paid as follows: —

First payment: — Five dollars for matriculation fee and seventy-five dollars on account of the tuition, a total of *eighty dollars*, payable at the beginning of the first semester.

Second payment: — Seventy-five dollars, the balance of the tuition, and five dollars, the additional charge, a total of *eighty dollars*, payable at the beginning of the second semester, or before February 1.

There is no charge for anatomical material or for laboratory supplies.

No student will be admitted to the exercises of the first half-year who has not paid his matriculation fee and at least one-half the tuition, and no student will be admitted to the exercises of the second half-year who has not paid his fees in full.

Students leaving the school have no claim for tuition paid.

Students who have failed twice in a subject are required to pay a fee of five dollars for each subsequent examination in that subject.

POST-GRADUATE FEES

Post-graduate fee for graduates of other schools . .	$150.00
Single course	50.00
Post-graduate fee for graduates of this School . . .	60.00
Single course	30.00
Anatomical material	at cost

The Bursar of the College will be at the School Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from October 1 to June 1.

There are no scholarships connected with the School.

The expenses of living in Boston need not exceed those in small cities and villages. Good board, including room, heat, and light, can be obtained in the vicinity of the school at from $5.50 to $7 a week. Students will not be allowed to occupy rooms disapproved by the Faculty.

LIBRARIES

The students of this School have free access to the Medical School Library, to the Library of Tufts College, to the Boston Public Library, and to the Boston Medical Library.

The library at the Medical School is open daily from 9.00 a. m. to 5.00 p. m., except Sundays and holidays. This library is intended to provide *text books for reference*, and the latest editions of all text books used in the school are furnished. These cannot be taken from the Reading Room. In addition, the library contains a large number of reference books in gen-

eral medicine and general surgery, and in all special branches of each. These works are loaned to the student free of charge, and can be taken out. Files of recent medical journals are a valuable addition to the school library.

The Boston Medical Library, which is situated near the School, has one of the largest and most complete collections of medical works in existence. It contains not only bound volumes of every important book in medical literature, but also a very extensive collection of monographs and pamphlets on special subjects. All the leading medical journals are on file for inspection. The Boston Medical Library extends its privileges, under certain conditions, free of charge to students of this School. Its rooms are open daily from Oct. 1 to May 31, from 9.30 A. M. to 10.00 P. M., except Sundays and holidays. The hours on Saturdays are from 9.30 A. M. to 6 P. M.

APPLICATIONS

Students who intend to enter the School for the first time must obtain from the Secretary an application blank, which they are required to fill out and return to him. Application blanks will be mailed upon request.

REGISTRATION

Registration is required of all students, each year. *Registration blanks for the session 1911–12 must be filled out and deposited with the Secretary on or before October 7, 1911.*

Registration is conducted at the school building only.

Summer Courses

The following subjects are offered during the summer months:—

PHYSIOLOGY

A course in physiology will be given during the months of June and July by, or under the direction of, the Professor of Physiology. For particulars of the course application should be made to Dr. Dearborn.

HISTOLOGY

A summer course will be given under the direction of the Professor of Histology. Particulars as to the scope of this work, and the fee, may be learned upon application to Dr. Bates.

CHEMICAL BIOLOGY

A summer class in chemical biology is conducted by Dr. Thorpe. This is a laboratory course, and is given in the laboratory of the department of Chemical Biology. For further particulars, apply to Dr. Thorpe.

THE DENTAL SCHOOL

Faculty of the Dental School *

FREDERICK WILLIAM HAMILTON, A.M., D.D., LL.D.
PRESIDENT — Tufts College

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SECRETARY, *and Professor of Clinical Surgery*

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JOSEPH KING KNIGHT, D.M.D. . . . . Hyde Park
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WILLIAM ELISHA CHENERY, A.B., M.D. . . 222 Huntington Ave.
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FREDERICK MORTIMER HEMENWAY, D.M.D. . 175 Tremont St.
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Professor of Physiology

WILLIAM PRESTON HOUSTON, D.M.D. . . . . 419 Boylston St.
Assistant Professor of Clinical Dentistry

* When only street and number are given in the address, the street is in Boston. With the exception of the President, the Dean, and the Secretary, the names are arranged in the order of academic seniority.

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ELMER S. BAGNALL . . . . . Roslindale
H. G. ARMITAGE . . . . . Haverhill
WILLIAM J. CURRY . . . . . Charlestown
WILLIAM B. GILES . . . . . West Somerville

Physiology

RALPH W. BICKNELL . . . . . Canton, Me.
ALFRED W. BROWN . . . . . Quincy
ERLE D. FORREST . . . . . Boston
WILLIS P. MIDDLETON . . . . . Quincy
STANLEY F. DUNCAN . . . . . Quincy

General Chemistry

EDWARD L. MARR . . . . . Malden
MAURICE V. BROWN . . . . . Norway, Me.
THOMAS E. POWER . . . . . Westfield
FRANCIS G. MINITER . . . . . Medford
RICHARD J. FITZGERALD . . . . . Montpelier, Vt.
JOHN H. T. SWEET, JR. . . . . Hartford, Conn.

Chemical Pathology

MYRON F. CUTLER . . . . . West Somerville
HARRY L. F. LOCKE . . . . . Hudson
WILLIAM D. SPROAT . . . . . Everett

Pharmacology

LAMERT OULTON . . . . . Port Elgin, N. B.
ALBERT W. COLWILL . . . . . Magnolia
FRANK A. O'REILLY . . . . . Lawrence

OTHER OFFICERS

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LINA A. MAYO . . . . . Milton
Stenographer

LILLIAN M. TATTAN . . . . . Somerville
Clerk to Secretary

MARY WRIGHT RICHARDSON . . . . . 19 Brighton Ave., Allston
Clerk of the Department of Clinical Dentistry

SARAH ELIZABETH MILLER . . . . . 7 Haviland St.
Clerk of the Department of Prosthodontia

FRANCES WILDER . . . . . 75 Rutland St.
Matron of the Department of Anesthesia and Extraction

STANDING COMMITTEES OF THE DENTAL SCHOOL

The Dean and the Secretary are members of all Committees, *ex officiis*

ADMINISTRATION.—The President, Drs. Branigan and Bates

ADMISSION.—Drs. Leary, Bates, and Dearborn

NOMINATIONS.—Drs. Hemenway and Barnes

LIBRARY.—Drs. Knight and Bates

INSTRUCTION.—Drs. Knight, Branigan, Hemenway, and Bates

CATALOGUE.—Drs. Bates and Dearborn

WOMEN'S ADVISORY COMMITTEE.—Drs. Elizabeth A. Riley, Olga Cushing-Leary, and Edna Weil-Dreyfus

Student Government Board

The members for the current year of the Student Government Board of the Medical and Dental Schools are as follows: —

CHAIRMAN

Joseph F. Golden, M '11

SECRETARY

Thomas H. Yates, D '11

MEDICAL SCHOOL:

Alphonse J. Peter, '11
Robert E. Cleary, '12
Richard F. McCoart, Jr., '13
J. Edward McCabe, '14

DENTAL SCHOOL:

Thomas E. Power, '11
Edward A. Kinley, Jr., '12
Arthur J. Quilty, '13

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Tufts College Dental School

416 Huntington Avenue

Boston, Mass.

The Dental School, formerly the Boston Dental College, became an incorporate part of Tufts College in 1899, under a special act of the legislature. It was incorporated under its former name in 1868, and is a firmly-established dental school of forty years' standing, with a large and distinguished body of alumni. Its transfer to Tufts College was in consequence of the new anatomical laws of the State, and because it was felt by its former board of trustees that the advance in dental education rendered it desirable that the purely scientific part of its curriculum should be pursued in connection with a medical school.

The course of instruction in this institution embraces three academic years of eight months each. The studies of the first year, and a portion of those of the second year, are given in connection with those of the Medical School. Instruction is by means of lectures, demonstrations, laboratory work, and recitations, in anatomy, physiology, histology, chemistry, materia medica, pathology, therapeutics, bacteriology, principles of surgery, hygiene, theory and practice of dentistry, oral surgery, and in operative, clinical, and prosthetic dentistry, orthodontia, and dental technics.

The infirmary, under the personal direction of the Professor of Clinical Dentistry, assisted by a corps of demonstrators, is open daily through the year, except during a part of June, the whole of July and August, and a part of September. In the abundance and variety of its clinical material it furnishes an unsurpassed opportunity for the study of oral surgery and of dentistry in all its branches.

The laboratory of the prosthetic department is provided with perfect facilities for every variety of dental work. Every student is required before graduation to present satisfactory specimens of the different forms of mechanical work made by himself in the laboratory of the School, and under the supervision of the Professor of Prosthetic Dentistry.

Further opportunities for instruction are furnished by the valuable clinics and operations at the large hospitals of the city, which can be visited by the matriculates of this institution. Numerous operations upon the face and oral cavity are performed before students on public operating-days, and all connected with the School are urged to avail themselves of the facilities thus offered.

THE BUILDING

The building is occupied by the combined Medical and Dental Schools of Tufts College, and was built in 1900, as it was found necessary to provide increased laboratory facilities owing to the rapid growth of the schools. Special attention is called to the dental infirmary which occupies the first floor of the dental wing. This room, 125 by 29 feet, is equipped and arranged in a manner similar to the operating room of a hospital; aseptic chairs, cuspidors and brackets have been especially constructed for this school. Steam sterilizers have been provided for the disinfection of instruments, and it is believed that by these moden applications of asepsis to dentistry, the infirmary is among the most complete dental infirmaries in this country. The prosthetic department, which corresponds in size to the infirmary, is equipped in the most approved modern fashion. For this department electric power is supplied. The lower floor of the dental wing is devoted to operative technics and to the department of anaesthesia and extraction. In the latter department, the most improved apparatus for the administration of nitrous oxide gas is provided, and there is a recovery room under the charge of a professional nurse, who is in daily attendance. A surgeon connected with the Medical School is present on occasions when ether is administered.

Owing to the rapid growth of the school, it has been found necessary to provide more and larger quarters for lectures and laboratory work. During the past summer a fourth story has been added, and the building has been largely remodeled. Three new lecture rooms have been added, giving a total of six lecture rooms, the largest seating 400 and the smallest 100. Each room has an excellent seating arrangement, and a sufficient equipment of opaque projectors and lantern slide apparatus. A new laboratory for the department of chemistry has been constructed on the fourth floor, the laboratory of the department of pathology and bacteriology has been renovated and enlarged, and the laboratory of the departments of histology and physiology has been completely remodeled. The building now has every possible facility for the most recent and advanced laboratory instruction.

Subjects of Instruction

ANATOMY

The course in anatomy is given throughout the first half of the first year. It consists of five lectures and two recitations weekly with the class, and of special demonstrations on the cadaver. In addition, during the first four weeks of the course six hours a week are devoted to section work in Osteology. Each student is required to dissect two parts, to the satisfaction of the Demonstrator of Anatomy, before taking the final examination. Record of attendance and of the quality of the work done in the dissecting room will be kept, and will largely determine the standing of the student in the class.

In the second half of the third year a course in special anatomy of the head is given.

CHEMISTRY

The course in general chemistry consists of descriptive chemistry and qualitative analysis, with so much of theoretical chemistry as is necessary for a proper understanding of the subject.

The classification of the carbon compounds is also taken up at considerable length, and special reference is made to those which are of interest in the study of medicine. The instruction is by lectures, recitations, and practical work by the students in the laboratory. There are five lectures, two recitations, and six or more hours of laboratory work for each student, every week during the first semester. Much attention is given to qualitative analysis for the sake of the valuable training which it imparts, and the knowledge of chemistry which is incidentally gained. The importance of this knowledge is evidenced by the fact that it is the only non-professional subject that is required in most dental schools. The aim is to impart such information in chemistry as is necessary to the intelligent dentist. At the same time any who wish to pursue the study further than is required of every graduate may do so by special arrangement.

During the second year this preliminary training in chemistry is followed by lectures, recitations, and laboratory work in dental chemistry. The metals, with their alloys and salts as used in dentistry, the bones and the teeth, the saliva, and the chemistry of the mouth are carefully studied. The high importance of the many applications of chemistry to the dental profession is fully recognized.

PHYSIOLOGY

The course in physiology is given throughout the latter half of the first year. It consists of five recitations, two lectures, and three conferences for every student each week, the preparation of a technical written paper, and extra demonstrations.

In the recitations, familiarity with the substance of an assigned text-book and with the Syllabus is required. The lectures set forth the principles of general physiology, and suggest some of its relations to the allied sciences, especially anatomy. The conferences give volunteers opportunity to become familiar with the literature on interesting physiological topics, which are then presented briefly in written reports and freely discussed by the class. Record both of the attendance and of the quality of the work done in the recitation-room will be kept, and, with the conference, will help to determine the standing of the student in the department. In addition, a three-hour written examination covering the entire scope of the year is held at the completion of the work, besides important subsidiary written examinations monthly.

By thus concentrating attention upon physiology during an adequate period, it is hoped that a thorough and indispensable grounding in the functions of the normal human organism will be acquired. Advanced work in physiology will be provided for competent students, by special arrangement with the head of the department, the constant aim being to adapt the labors of each student both to his needs and to his capabilities.

HISTOLOGY

The subject of histology covers the second half of the first year. The work during the first half of the allotted time will

be identical with that of the students in the Medical School. This part of the subject covers the study of the elementary tissues, treated comprehensively, beginning with their origin in the embryo. Dental histology will be taught during the second year. In this connection particular attention will be given to the study of the minute anatomy of the tooth. The development of the teeth will also receive careful treatment. A training which gives the student a knowledge of the origin and history of the dental germ lays a suitable foundation for the dentist.

The department is equipped with microscopes which, on the payment of a small fee, will be at the service of such as cannot furnish instruments of their own.

ELEMENTARY HYGIENE

During the first half of the Freshman year, elementary hygiene is taught, together with the benefits to be derived from pure and wholesome associations, with the object of developing high moral, mental, and physical qualities.

OPERATIVE DENTISTRY

In operative dentistry the instruction is both didactic and clinical. Lectures are given covering the whole field, familiarizing the student with all known methods, the conditions under which different filling materials are used, and the most approved manipulation of the same. Many lectures are followed by clinics before divisions of the classes, where attendance is obligatory. By this means every detail of the operation is impressed upon the mind of the student. Great emphasis is placed upon the preparation of cavities for filling. Instruction is further given concerning the pathological conditions of the mouth and the treatment of the same, exposed pulps, inflamed pulps, dead pulps, abscesses, inflammation of the peridental membrane, and allied subjects. Special attention is given to the preparation of cavities for porcelain filling, and the manipulation of the same. Prophylaxis also is taught, under improved systematized methods.

OPERATIVE TECHNICS*

The technical laboratory is situated on the lower floor, and is exceptionally well lighted from three sides. It is equipped with benches having lock drawers for each student, and has power lathe and other implements for convenient use.

Instruction in this course will be by lectures, illustrated by models and drawings, and by practical work on the part of the student. The student's work will include the study of the forms of teeth, with carving in ivory; study of the position and form of pulp chambers and canals, with dissection of teeth; proper methods of treating and filling pulp canals, with operations on extracted teeth. Porcelain inlay work, with practical examples, also proper methods of forming cavities for filling, and the manipulation of all filling materials, will be included.

CLINICAL DENTISTRY

The method of instruction in clinical dentistry is by clinical lectures to the students of each class, accompanied by practical demonstration of various operations on the teeth and neighboring tissues.

Ample opportunity for work in practical operative dentistry is furnished in this department, and the student, by actual practice, receives training in the various dental operations, and in the diagnosis and treatment of diseased conditions of the mouth and teeth.

PROSTHODONTIA

The instruction in prosthodontia consists of a graded course of didactic lectures to the entire class, illustrated by models and diagrams, on the nature, properties, and manipulation of the various materials used in making artificial dentures, crowns, and bridge-work, preparatory to, and in harmony with, the laboratory work in prosthetic dentistry. These lectures extend through the three years of the course.

* NOTE.—The operations in the technical departments require a very large number of natural teeth, and a sufficient supply is sometimes difficult to get. It will therefore be to the interest of students if they will bring with them all the extracted teeth they can obtain.

PROSTHETIC DENTISTRY

Particular attention is given to practical manipulation of vulcanite, celluloid, aluminum, and cast metal, for dentures; to gold-plate work, to preparation of plate for continuous gum and the application of continuous gum to crown and bridge work, as well as the construction of gold crowns and bridges. The natural form, color, and arrangement of the teeth, together with the entire range of procedure, from taking the impression to the completion of the case and its proper adjustment in the mouth, are thoroughly demonstrated.

ORTHODONTIA

The instruction in the department of orthodontia consists of illustrated lectures dealing with normal development of both temporary and permanent teeth and adjacent tissues, compared with mal-development; also the etiology and treatment of the various deformities of the mouth and teeth.

In addition, the student will be taught the technique and management of practical cases, under the direction of the instructors.

PHARMACOLOGY

Instruction in pharmacology consists of lectures, recitations, and laboratory exercises, twelve hours a week throughout the second half-year. Especial attention is given to the physiological action of drugs in its relation to their therapeutical application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory course is designed to familiarize the student with all medicinal preparations and processes, and consists of exercises in which the class in sections is led to this result practically.

Prescription writing and the metric system will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

PATHOLOGY AND BACTERIOLOGY

The subjects of pathology and bacteriology will be considered together. This method permits showing the relation of bacteria

to the disease processes which they produce. The work will consist of lectures, required laboratory work, and demonstrations. The student is made acquainted with the bacteria of the mouth, and is required to cultivate and study the important organisms. He is expected to carry out experiments to demonstrate the production of artificial caries. The subject of general pathology will be thoroughly covered. The special pathology of the mouth, and of the respiratory and intestinal tracts, will be given particular attention. Inflammation, especially the infectious types, among which are the lesions produced by the pyogenic bacteria, will be carefully considered. The process of repair in soft tissues and bone, and tumors of the mouth and face, are studied from sections of human and experimental lesions, and illustrated by demonstrations of gross specimens. In connection with the study of infectious processes, the specific bacteria will be cultivated and studied. Diseases of the circulatory system are illustrated by lectures and gross demonstrations. The methods of sterilization and their relative efficacy are practically studied, and tests are made of a large series of antiseptic and disinfectant substances.

The pathological and bacteriological department of the School occupies over four thousand square feet of floor space, with a frontage of one hundred and sixty feet. It is excellently lighted. The laboratory furnishes accommodation for one hundred students, and is supplied with all the materials necessary for thorough work.

THEORY AND PRACTICE OF DENTISTRY

The instruction in the theory and practice of dentistry is designed to teach the most advanced scientific discoveries in relation to this art.

It will include such subjects as the action of mouth bacteria, diseases dependent upon dental lesions, dental prophylaxis, oral hygiene, and the ethics of dental practice. The course will be arranged to harmonize with and to supplement the work of the clinical department.

THEORY AND PRACTICE OF MEDICINE

The work in the theory and practice of medicine consists of a series of lectures given to the dental students by members of the Faculty and Board of Instruction of the Medical School. It is intended to include such subjects as general infectious and contagious diseases; syphilis; stomatitis and tonsilitis; diseases of the heart, kidneys, and skin; neuralgia and neurasthenia; disorders of the alimentary tract; pregnancy; tuberculosis. Lectures upon legal medicine and other subjects will be given. It is believed that a course of this description will be of the utmost practical value to dental students, as it will make them acquainted with the nature of a large class of diseases and conditions which they are liable to meet in the practice of dentistry.

HYGIENE AND SANITATION

The Faculty, realizing that the conditions under which the dentist lives and works may be conducive or detrimental to his well-being, has established a course in hygiene and sanitation for students of the third-year class.

The conservation of vital forces that protect from disease; the knowledge of what constitutes pure air, good water, wholesome food, abundant exercise, ample recreation, and how they may be obtained; the vital cause of transmissible diseases, how transmitted and through what portals entrance to the human body is gained, are subjects with which the dentist should be familiar, for his occupation often necessitates close relations with patients suffering from diseases acquired only through transmission from one person to another. If he is possessed of this knowledge, together with the ability to make a probable diagnosis from plainly manifested symptoms, he may preserve his health, and by simple precautions escape the preventable diseases, especially of the respiratory and alimentary tracts.

SURGERY

The course in surgery consists of a systematic series of lectures covering its principles. These lectures explain the fundamental facts which should be thoroughly understood by

all students who propose to treat any portion of the human body. The lectures are not limited to surgery of the mouth, although especial attention is given to this part of the subject, but are intended to give the dental student a sound knowledge of surgery in general.

Asepsis and anesthesia are minutely discussed, and practically demonstrated in the infirmary, in conjunction with the Professor in Operative Technics and Anesthesia. The student is carefully instructed in the administration of ether and of nitrous-oxide gas. In addition to the daily instruction, one morning in each week is devoted wholly to this work, the class being divided into sections. At this weekly demonstration, cases are presented exemplifying the choice of an anesthetic in the particular case. The danger signals of anesthesia are considered, and the proper treatment explained. Local anesthesia receives careful attention, and its limitations are pointed out.

The technic of aseptic and antiseptic methods in dental work is thoroughly explained, and shown in connection with the demonstrations of anesthetics.

ANESTHESIA AND EXTRACTION

The extracting room, a well-lighted apartment, is supplied with all needful instruments and appliances for extracting teeth and for the performance of the simpler operations in surgery. Ample waiting rooms are adjacent, and also rooms for the care of patients after anesthesia. Administrations of nitrous-oxide gas and ether are made daily. The room is at all times under the personal supervision of the Instructor in Anesthesia.

Requirements

FOR ADMISSION

Candidates for admission to this School, except as hereafter stated, must pass a written entrance examination in the following studies: English, Algebra, Plane Geometry, Physics, and Latin, and one subject to be chosen from the following: American History, Biology, Chemistry, French, or German.

(*a*) English: a composition of two hundred words upon some subject of general interest; the same to be criticised in relation to thought, construction, punctuation, spelling, and handwriting. The subject for this examination in 1911 will be chosen from the following: — (1) Shakespeare's Macbeth; (2) Goldsmith's Vicar of Wakefield; (3) Carlyle's Essay on Burns; (4) Scott's Ivanhoe. Every candidate is expected to have read intelligently all the books prescribed.

(*b*) Algebra: the fundamental operations, factors, fractions, simple equations, simultaneous equations of the first degree, involution and evolution, exponents, and quadratic equations. Texts similar to those of Wells or Wentworth are suggested for study.

(*c*) Plane Geometry.

(*d*) Physics: an examination suited to those who have studied such text-books as Gage's Elements of Physics, or Carhart and Chute's Elements of Physics.

(*e*) Latin: a sight translation of easy Latin, as, for example, simple passages from Cæsar's Gallic War; also the translation into Latin of easy English sentences based on the first fifteen chapters of Book I of the Gallic War.

(*f*) In addition to the above, the candidate must present himself for examination in *one* of the following subjects:—

1. American History: The text-book suggested is McLaughlin's History of the American Nation.

2. Biology: The text-books suggested are Colton, Zoölogy, Descriptive and Practical; Jordan, Kellogg and Heath, Animals; Kingsley, Elements of Comparative Zoölogy; Needham, Lessons in Zoölogy.

3. Chemistry: The text-book suggested is Newell's.

4. German: Kayser and Montesu's Brief German Course, or Edgren and Fossler, or the "first part" of the Joynes-Meissner Grammar, together with some seventy-five pages of easy German from such texts as are commonly read in the first year of the preparatory school, will represent the amount of preparation expected.

5. French: Grandgent's Short French Grammar, or the "first part" of any one of the commonly used grammars, together with about one hundred pages of easy French (as above).

In modern languages the equivalent of one year's study, with four periods a week, is required.

Students who have failed in not more than two of these subjects may be admitted, subject to condition.

Students who have failed to remove their entrance conditions before the beginning of the second year will be catalogued with the first-year class.

The entrance examinations will be held on Monday, June 26, and on Saturday, Sept. 16, 1911, at 10 A.M. They will be conducted at Ballou Hall, Tufts College, Mass., not at the Medical-Dental Building.

Beginning in September, 1912, the requirements for admission to the Dental School will be the same as those announced to take effect at that time in the Medical School.

EXCEPTIONS.—Graduates of approved colleges or universities, graduates of approved high schools, and students holding Regents' certificates of the State of New York are admitted without examination.

ADVANCED STANDING

Students who have taken courses in other accredited dental schools are admitted to advanced classes upon presenting satis-

factory evidence that they have passed the examinations required for the class they desire to enter.

Students presenting evidence of a course equivalent to the course in general chemistry given in the first year are allowed to anticipate the subject upon passing the fall examinations.

PROMOTION

Students who have passed a majority of the examinations of the first-year class, and all entrance conditions, may be promoted to the second-year class. Students who have passed all the first-year and a majority of the second-year examinations may be admitted to the third-year class.

GRADUATION

Candidates for the degree of Doctor of Dental Medicine must have fulfilled the following minimum requirements: —

1. They must present a certificate that they are twenty-one years of age and of good moral character.

2. They must have attended at least three full courses of lectures in some accredited dental school, the last of which shall have been at this School, and no two courses in the same twelve months.

3. They must have passed all the examinations required, and have satisfied the professors of clinical and prosthetic dentistry of their ability to meet satisfactorily the requirements of the profession.

4. They must have satisfactorily dissected under the direction of a demonstrator of anatomy.

5. They must have paid all fees.

CHANGE OF REQUIREMENTS

The Faculty reserve the right to change all requirements without further notice.

HONORS

Students who have attended three full courses of ectures at ool and have attained an average of ninety per cent. in

their examinations shall be eligible to "*summa cum laude*"; and students who have attained an average of eighty per cent. shall be eligible to "*cum laude*" in connection with the degree received.

STANDING AND CERTIFICATES

At the end of the session a statement of his standing for the year is sent by mail to each student. These certificates must be preserved for future reference. No marks will be sent or credit given to any student who is in arrears with the Bursar.

EXAMINATIONS

There are two periods of examination held each year in the school building. Examinations are in writing, and are held at the close of the course in the spring, and previous to the opening of the regular course of lectures in the fall.

The spring examinations are for:—

(*a*) Students commencing the study of dentistry.
(*b*) Promotion.
(*c*) Graduation.

The fall examinations are for:—

(*a*) Students commencing the study of dentistry.
(*b*) Removal of conditions in:
1. Previous entrance examinations.
2. The first-year course.
3. The second-year course.

Students intending to take the fall examinations (other than entrance) *are required* to notify the Secretary on or before September 2, 1911.

The fall examinations for the removal of conditions (other than entrance) will commence Monday, September 11, 1911, at 10 A.M. A detailed list of the subjects in which examinations are given, with the day and hour of each, will be mailed after September 1, 1911, on application.

REGISTRATION AT EXAMINATIONS

In each examination (except those for entrance) students who fail to sign the registration blank provided for the purpose shall receive no credit for that examination.

The examinations in course are as follows:

EXAMINATIONS

First Year. *Finals* in Anatomy, Physiology, General Chemistry, Histology, Operative Technics, and Elementary Hygiene.
Progress in Prosthetic Dentistry and in Prosthodontia.

Second Year. *Finals* in Materia Medica, Pharmacology, Dental Chemistry, Pathology, Bacteriology, and Dental Histology.
Progress in Operative Dentistry, Clinical Dentistry, Orthodontia, Prosthetic Dentistry, and Prosthodontia.

Third Year. *Finals* in Oral Surgery, Orthodontia, Theory and Practice, Hygiene, Operative Dentistry, Clinical Dentistry, Prosthetic Dentistry, and Prosthodontia.

TEXT BOOKS

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy.—Gray, Weisse, Quain, Morris, Cunningham, Solatta, McMurrich.

Physiology.— Syllabus, Dearborn's Text-Book of Physiology, Howell, Landois, Verworn, Schäfer, Morat, Hutchinson.

Chemistry.—Simons's Manual, Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis, Mitchell's Dental Chemistry.

Dental Histology and Microscopy.—Syllabus, Stohr's Histology, Tome's Dental Anatomy (latest edition).

Pathology.—Syllabus, Miller's Micro-Organisms of the Human Mouth, Burchard's Dental Pathology.

Hygiene.—Egbert's Hygiene and Sanitation.

Materia Medica and Therapeutics.—Hare, U. S. Dispensatory, Gerrish's Prescription Writing.

Orthodontia.—Malocclusion of the Teeth, Angle (7th edition); Orthodontia, Guildford (4th edition); Internal Anatomy of the Face, Cryer.

Practice of Surgery.—American Text Book, Marshall's Injuries and Surgical Diseases of the Jaws, International Text-book of Surgery.

Dental Science and Operative Dentistry.—Kirk's Operative Dentistry, Garretson's Oral Surgery, Black's Dental Anatomy, Weeks's Operative Technics, American System of Dentistry, Harris's Practice of Dental Surgery, Taft's Operative Dentistry.

Prosthetic Dentistry.—Essig's American Text-book of Prosthetic Dentistry, Richardson's Mechanical Dentistry, Evans's Crown and Bridge Work, Gilbert's Vulcanite and Celluloid.

Bacteriology.—Abbott, Woodhead, Sternberg.

Medical Dictionary.—Dunglison.

FEES AND EXPENSES

A matriculation fee of *five dollars* is payable each year.

A charge of *one hundred and fifty dollars* for tuition is payable in advance.

If desired, the tuition may be paid in instalments, in which case an additional charge of five dollars is made, and the fees are then paid as follows: —

First payment: — Five dollars for matriculation fee and seventy-five dollars on account of the tuition, a total of *eighty dollars*, payable at the beginning of the first semester.

Second payment: — Seventy-five dollars, the balance of the tuition, and five dollars, the additional charge, a total of *eighty dollars*, payable at the beginning of the second semester, or before February 1.

There is no charge for anatomical material or for laboratory supplies.

No student will be admitted to the exercises of the first half-year who has not paid his matriculation fee and at least one-half the tuition, and no student will be admitted to the exercises of the second half-year who has not paid his fees in full.

Students leaving the school have no claim for tuition paid.

Students who have failed twice in a subject are required to pay a fee of five dollars for each subsequent examination in that subject.

POST-GRADUATE FEES

Post-graduate fee for graduates of other schools . .	$150.00
Single course	50.00
Post-graduate fee for graduates of this school . . .	60.00
Single course	30.00
Anatomical material	at cost

The Bursar of the College will be at the School, Monday,

Wednesday, and Friday, 2.30 to 5.00 P.M., from October 1 to June 1.

There are no scholarships connected with the School.

The expenses of living in Boston need not exceed those in small cities and villages. Good board, including room, heat, and light, can be obtained in the vicinity of the school at from $5.50 to $7 a week. Students will not be allowed to occupy rooms disapproved by the Faculty.

OUTDOOR DEPARTMENT

Clinical Dentistry

For many years it has been the custom of the authorities of this School to furnish to certain charitable and penal institutions qualified dentists for the purpose of alleviating cases of actual suffering. Applications for an extension of this service should be made to E. W. Branigan, A.M., D.D.S., Department of Clinical Dentistry, Tufts College Dental School, Boston, Mass.

Prosthetic Dentistry

In a manner similar to the above it has been the custom of the authorities of this School to furnish to the inmates of certain institutions for the aged, at the nominal charge of the cost of materials, artificial teeth and appliances. Institutions desiring to avail themselves of the privilege should apply to F. M. Hemenway, D.M.D., Department of Prosthetic Dentistry, Tufts College Dental School, Boston, Mass.

STATE BOARD EXAMINATION

Students shall not take a State Board Examination in Dentistry previous to the time of final examinations of the third year, without written permission from the Secretary of the Dental School.

General Information

The Tufts College Dental School is a member of the National Association of Dental Faculties, and conforms to its rules, as well as to those of the National Association of Dental Examiners.

All students must be registered and in attendance within ten days after the commencement of lectures.

LIBRARIES

The students of this school have free access to the Dental School Library, to the Library of Tufts College, to the Boston Public Library, and to the Boston Medical Library.

The library at the Dental School is open daily from 9.00 a. m. to 5 p. m., except Sundays and holidays. This library is intended to provide *text books for reference*, and the latest editions of all text books used in the school are furnished. These cannot be taken from the Reading Room. In addition, the library contains a large number of reference books in general medicine and general surgery, and in all special branches of each. These works are loaned to the student free of charge, and can be taken out. Complete files of various medical journals provide a valuable addition to the school library.

The Boston Medical Library, which is situated near the School, has one of the largest and most complete collections of medical works in existence. It contains not only bound volumes of every important book in medical literature, but also a very extensive collection of monographs and pamphlets on special subjects. All the leading medical journals are on file for inspection. The Boston Medical Library extends its privileges, under certain conditions, free of charge to students of this School. Its rooms are open daily from Oct. 1 to May 31, from 9.30 a. m. to 10.00 p. m., except Sundays and holidays. The hours on Saturday are from 9.30 a. m. to 6 p. m.

SESSIONS OF THE SCHOOL

The annual course of lectures begins on the last Wednesday

in September of each year, and continues until the last Wednesday in May. The annual course of lectures for 1911-12 will commence Wednesday, September 27, 1911, at 3 p. m.

VACATIONS

There are no exercises at the School during three days at Thanksgiving, ten days at Christmas, and the week beginning April 2, nor upon Columbus Day, Washington's Birthday, Patriots' Day, and Memorial Day.

APPLICATIONS

Students who intend to enter the School for the first time must obtain from the Secretary an application blank, which they are required to fill out and return to him. Application blanks will be mailed upon request.

REGISTRATION

Registration is required of all students, each year. *Registration blanks for the session 1911-12 must be filled out and deposited with the Secretary on or before October 7, 1911.* Registration s conducted at the school building only.

ANNOUNCEMENT

Requests for the annual catalogue, and all other communications relating to the business of the School, should be addressed to the Secretary, FREDERIC M. BRIGGS, M.D., Tufts College Dental School, Boston, Mass.

Summer Courses

The following subjects are offered during the summer months: —

PHYSIOLOGY

A course in Physiology will be given during the months of June and July by, or under the direction of, the Professor of Physiology. For particulars of the course application should be made to Dr. Dearborn.

HISTOLOGY

A summer course will be given under the direction of the Professor of Histology. Particulars as to the scope of this work, and the fee, may be learned upon application to Dr. Bates.

THE BROMFIELD-PEARSON SCHOOL

The Bromfield-Pearson School

BOARD OF INSTRUCTION

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT

GARDNER C. ANTHONY, A.M., Sc.D., DEAN
Professor of Technical Drawing

SAMUEL C. EARLE, A.M.
Professor of English

CHARLES E. STEWART, S.B.
Assistant Professor of Mechanic Arts

GEORGE F. ASHLEY
Assistant Professor of Technical Drawing

CARLETON A. WHEELER, A.M.,
Instructor in Modern Languages

———— ————

Instructor in Mathematics

The Bromfield-Pearson School

The Bromfield-Pearson School is intended to meet the wants of young men whose preparation for an Engineering course may be partially deficient in one or more of the required branches, but whose practice and experience in the applied part of Engineering may qualify them to pursue college work while making up these deficiencies. By this means an engineering education is made possible to those who may have been deprived of the opportunities for obtaining the necessary preparation, or who may have allowed considerable time to elapse between the high school and the college course. A mature mind, industrious habits, and a keen appreciation of the value of the higher education in Engineering are essential qualifications for engaging in this work.

As it is the intention of the Trustees to limit the membership to those earnest and somewhat mature students who cannot afford the time ordinarily required in the fitting school, candidates will not be received from manual training and high schools.

ADMISSION

Students intending to join the School must obtain from the Dean an application blank, which they are required to fill out and return. On receipt of this statement they will be informed as to the conditions of entrance and the program of studies which it will be possible to pursue.

REGULATIONS

Students are subject to all the rules governing members of the College.

All preparatory work must be completed during the year, as no student will be admitted to the School for more than one year.

Students admitted to college classes will be required to obtain a somewhat higher per cent. than the minimum requirement for engineering students.

On the satisfactory completion of the preparatory work students will be given a certificate of admission to the College. They will also receive credit for college work which may count toward a degree.

The President and the Dean have final authority concerning admission, promotion, and discipline.

EXPENSES

The tuition fee is one hundred and fifty dollars a year, payable as follows: seventy-five dollars on or before October 1, and the remainder on or before March 1.

A registration fee of five dollars is charged each entering student, and is payable at the time of registration.

No part of the tuition fee will be refunded to pupils who for any reason withdraw from the school before the close of the term for which the fee is paid.

The cost of table board is from $4.00 to $5.00 per week. Furnished rooms may be had at $1.50 or $2.00 a week. Other expenses vary with the economy of each student. Students living in the college dormitories furnish their own rooms.

The following estimates represent the fixed annual expenses:—

Tuition	$150.00	$150.00
Half-room rent	20.00	91.00
Board, $4.00 to $5.00 a week (36 weeks)	144.00	180.00
Physical training		10.00
Books, instruments, and supplies	15.00	25.00
Total	$329.00	$456.00
Registration-fee, for entering students		$5.00

For other information address GARDNER C. ANTHONY, Dean of the Bromfield-Pearson School, Tufts College, Mass.

The Harpswell Laboratory

INSTRUCTORS

J. STERLING KINGSLEY, Sc.D.
Director, and Professor of Biology

HERBERT V. NEAL, PH.D.
Professor of Biology, Knox College, Galesburg, Ill.

In 1898 summer instruction in biology was given at South Harpswell, Maine, and in 1901 the college erected a small laboratory at that point, enlarging it in 1902. The location is admirably adapted for biological research, since the fauna of Casco Bay is extremely rich. Over forty papers have been published based on researches carried on in the laboratory. The laboratory is equipped with boats, dredges, glassware, apparatus, and reagents, for study on the lines of anatomy and embryology. There is also a small library of the most important works.

South Harpswell is two hours by steamer from Portland. It is at the extremity of a narrow peninsula ten miles in length, and has a cool climate. There are several hotels and boarding houses, where board and rooms may be had at five dollars a week and upward.

The Harpswell Laboratory will be open free during the summer of 1911, for research work only, under the direction of DRS. KINGSLEY and NEAL.

For circulars and other information concerning the Harpswell Laboratory, inquiries should be directed to PROFESSOR J. S. KINGSLEY, Tufts College, Mass., or to PROFESSOR H. V. NEAL, Galesburg, Ill.

DEGREES AND HONORS

1909-1910

Fifty-Fourth Annual Commencement

June 15, 1910

HONORARY DEGREES CONFERRED

Doctors of Laws

Eben Sumner Draper — Arthur M chael

Morton Prince

Doctor of Science

Horace Field Parsha l

Doctor of Sacred Theology

The Reverend John Hunter

Masters of Arts

Frank Shipley Collins — Isaac Dudley Fletcher

Bachelors of Arts

Gladys Marion Adams (*summa cum laude*)
Hubert Evelyn Bray
Helen Stanley Burnham (*magna cum laude*)
Harry Arthur Burt
Estella Elizabeth Butterfield
Signa Eleanor Byorkman (*summa cum laude*)
George Winthrop Cahoon
Elsie May Chandler
Leon Franklin Cummings
Annie Morinda Currie (*magna cum laude*)
Edward Everett Fessenden
Genevieve Louise Fosdick
Robert Smith Fullerton
John Harrison Gavin, Jr.
Bernice Evelyn Glidden (*cum laude*)
Guy Hamilton
Levi Thomas Hopkins (*cum laude*)
Marion Marble Jones
Myrtle Mevis Killpartrick (extra ordinem as of the class of 1909)
Robert Mossman Knight
Helen May Leonard
Raymond Gilbert Lincoln
Louise Augusta Morrison (*magna cum laude*)
Ralph Wentworth Penniman
Charles Goodwin Prentiss
Jennie Mildred Rextrow
William Andrew Sargent
Ada Bond Seabury (*cum laude*)
Amy Derby Segitz
Ada Louise Smith
Grace Carpenter Waterman
Effie Marie Wood

Bachelors of Science in Chemistry

Crosby Fred Baker (*cum laude*)
George Prescott Fuller (*magna cum laude*)

Bachelors of Science in General Science

Walter Fairfield Gray — George Rice Woods

Bachelor of Science, Medical Preparatory Course

Walter Warren Kingsbury (extra ordinem as of the class of 1900)

Bachelors of Science in Civil Engineering

Lewis William Bartlett
Oscar Clemens Bohlin
Harold Thomas Burgess (*cum laude*)
Chester Ingalls Conn (*cum laude*)
James Earl Douglas (*magna cum laude*)
Samuel James Heap
Henry Clinton Houston
Leonard Illman Lamb (*cum laude*)
John Bruce Mailey
George Edward Merchant, Jr.
William Harrison Morrison, Jr.
Ephraim Ericson Sanders
Ralph Marquis Simmons (*summa cum laude*)
Walter Smead Stanford
Leslie Swartz
Prentice Williams Towsley (*cum laude*)
Winthrop Lodge Wales (*cum laude*)
Henry Cass Whippen, A.B. (*summa cum laude*)
Frederic Percy Whitney
Samuel Zion

Bachelors of Science in Electrical Engineering

John Alden Adams
Richard Congdon Allen (*cum laude*)
Leo Waldemar Chase
Leslie Forrest Curtis (*summa cum laude*)
Charles Dunn Cushing (*cum laude*)
Gilbert Everett Ellis, Jr.
Roys Arthur Ellis
Roy William Thompson Francis
Prentice Manning Hatch
George Sanborn Hulen
Robert Edes Kimball (*summa cum laude*)
Gilberto Lasnier (*magna cum laude*)
John Henry Leavitt
Paul McClintock
Walter Rufus McLeod (*cum laude*)
William Morrison, Jr.
John Jeremiah Murrill
James Alfred Reynolds
Sidney Leroy Savage
Cleveland Conner Soper
Chester Warren Taylor
Irving Hart Tolles
Elmar Hursh Whitney

Bachelors of Science in Mechanical Engineering

Arthur Brock Newhall (*cum laude*)
Ruel Howard Smith
Frederick Orren Snow, Jr. (*magna cum laude*)

Bachelors of Science in Chemical Engineering

Frank Vincent Gordon
Earle Sessions Wallace

Bachelors of Divinity

George Clyde Boorn
Roger Frederick Etz, A.B.
George Fisher Morton, B.S., M.S.
Dayton George Vogt, A.B.

Doctors of Medicine

James Bernard Bigelow
Raymond Whitcomb Bliss
Louis Raymond Burnett
Claudius James Byrne (*cum laude*)
Edward Spence Cameron (*cum laude*)
Harry Ainsworth Clark
James Henry Cook
William Wilder Cook
Walter Midkiff Crandall
Dana Frank Cummings
Alfred Davidson
Charles Arthur Derby (extra ordinem as of the class of 1909)
Arthur Dixon
John Edward Dodd (*cum laude*)
Walter James Donovan
Joseph Leonard Drummey
Alphonse Napoleon Ducharme
James Ringer Dunn (*cum laude*)
George William Earle
Maurice Fishman
Nachem Friedman (extra ordinem as of the class of 1909)
Wilfred Goldwin Funnell (*cum laude*)
Wilhelmina Georgina Marie Von Gerber
Charles Israel Granstein
Dennis William Heffernan (*cum laude*)
Samuel Henry Kagan (*cum laude*
Clarence Bronson Kenney (*cum laude*)
Robert Brown Kerr
Serafin Loredo (*cum laude*)
Warren Winfield Marston
Oscar Martin
Robert Joseph Muir
Dennis John Murphy
John Patrick Henry Murphy
Edward Louis Myers
Harry Olin
Anna O'Sullivan
Mary McDermott Penny
Louis Jacob Pobirs
Cyril Godfrey Richards
David William Rosen
Carl Axel Schillander (extra ordinem as of the class of 1909)
Eleanor Mary Slater (*cum laude*)
Earl Moulton Smith
Russell Bradford Sprague
Albert Warren Stearns
Elmer Ellsworth Thomas
Joseph Humphrey Toomey (*cum laude*)
Joseph Patrick Tynan (*cum laude*)
Albert Edward Webb
Robert Marshall White

Doctors of Dental Medicine

Louis Albert Badgley
Melville Crawford Bagnall
Frederick William Becker
Orville Thayer Bliss (*cum laude*)
Ernest Linwood Brown
Walter Eugene Burr
William Joseph Clegg
Fred Rich Crerie
Francis Henry Dean
George Herbert Dickinson
Timothy Joseph Donovan (*cum laude*)
Russell Ellis Dorr
Clark Otto Doubleday (*cum laude*)
James Alexander Dunlop
Melville Leroy Eldridge (*cum laude*)
John Royden Gilbert
Carolus Roy Given

Frederick Edward Grant
Louis Alfred Haffner
Francis Randolph Henderson
Philip Augustine Hennebery (*cum laude*)
Frank Hoy
Frederick Green Jellison
William Fownes Keith
Charles Patrick Kelly
John James Kneeland
Henry Keville Lambert
Edward Mark Lynch
Edwin John Morse (*cum laude*)
Alfred Warren Nash (*cum laude*)
René Lucien Petzoldt
Harold Charles Plaisted
Francis White Regan (*cum laude*)
Max Rosenthal (*cum laude*
Israel Myer Shallen (*cum laude*)
Ernest Joseph Smith
Vincent Joseph Staples
Frederick Weeks Steadman (*cum laude*)
Anastasia Louise Sullivan (*cum laude*)
John Nathaniel Thomson
Jeffrey James Walsh

Masters of Arts

Harvey Eastman Averill, A.B. (History and Public Law)
Mary Florentia Bogue, A.B. (Ancient Languages)
Leroy James Cook, A.B. (Modern Languages)
Charles Haskell Danforth, A.B. (Biology)

Master of Science

Charles Brooks Clark, B.S. (Engineering)

Doctor of Philosophy

George Edward Pearson, A.B., A.M. (History and Public Law)

Commencement Parts

Gladys Marion Adams, Cand. A.B.: "The Myth—Its Interpretation in the Light of Modern Knowledge"
Leslie Forrest Curtis, Cand. B.S.: "The Value of Hydrostatic Developments"
Hubert Evelyn Bray, Cand. A.B.: "Ideas in George Meredith's Poems"
Wilfred Goldwin Funnell, Cand. M.D.; "Radium, and its Uses to the Medical Profession"
Clark Otto Doubleday, Cand. D.M.D.: "The Duty of the Dental Profession to the Public"
Leroy James Cook, A.B., Cand. A.M.: "Medieval French Drama and the People"
Dayton George Vogt, A.B., Cand. B.D.: "The Church of To-Morrow"

Honors

Gladys Marion Adams (English)
Signa Eleanor Byorkman (History and Public Law)
Annie Morinda Currie (Greek)

Leslie Forrest Curtis (Electrical Engineering)
James Earl Douglas (Structural Engineering)
George Prescott Fuller (Chemistry)
Robert Edes Kimball (Electrical Engineering)
Gilberto Lasnier (Electrical Engineering)
Louise Augusta Morrison (Greek)
Ralph Marquis Simmons (Structural Engineering)
Frederick Orren Snow, Jr. (Mechanical Engineering)
Henry Cass Whippen (Structural Engineering)

Honorable Mention

Gladys Marion Adams (Greek)
Richard Congdon Allen (Electrical Engineering)
Crosby Fred Baker (Chemistry)
Harold Thomas Burgess (Civil Engineering)
Helen Stanley Burnham (History and Public Law, and Philosophy)
Signa Eleanor Byorkman (English and Philosophy)
Chester Ingalls Conn (Structural Engineering)
Leslie Forrest Curtis (Civil Engineering)
Charles Dunn Cushing (Electrical Engineering)
Bernice Evelyn Glidden (English)
Levi Thomas Hopkins (Philosophy)
Robert Edes Kimball (Civil Engineering)
Leonard Illman Lamb (Civil Engineering)
Walter Rufus McLeod (Electrical Engineering)
Arthur Brock Newhall (Mechanical Engineering)
Ada Bond Seabury (English)
Ralph Marquis Simmons (Civil Engineering)
Prentice Williams Towsley (Structural Engineering)
Winthrop Lodge Wales (Structural Engineering)
Henry Cass Whippen (Civil Engineering)

Awards of Prizes, 1909-1910

Goddard Prize in Mathematics

VANNEVAR BUSH

Goddard Prize in Latin

CHARLES GOODWIN PRENTISS

Scholarship of the Class of 1882

EVERETT WESLEY IRELAND

Scholarship of the Class of 1898
JOSEPH FREDERICK THIELE MANN

Greenwood Prize Scholarship in Oratory
FORBES WILLIAM ROBERTSON

Moses True Brown Scholarship
JOSEPH WEBSTER MORTON

Alpha Omicron Pi Scholarship
EVELYN HEARSEY

Wendell Phillips Prize Scholarship
ERNEST SIEGFRIED SWENSON

Rhetorical Prizes

First Prize
ERNEST SIEGFRIED SWENSON

Second Prize
CHARLES DOUGLAS KEAN

Third Prize
ALVA VIVIAN WOODE

Greenwood Prize in Oratory in the Divinity School
ROGER FREDERICK ETZ

REGISTER OF STUDENTS

Graduate School

Graduate Students

	Tufts College	*36 Emery St.*
	Passamaquoddy Harbor, Me.	West, 17
	Tufts College	*146 Curtis St.*
	Civil Engineering	
	Grove Hill	Paige, 6
	Somerville	*5 Neilson Ave.*
	Medford	
	Tufts	Curtis, 6
	Political Economy	
	Somerville	*157 Willow Ave.*

Graduate Student

	Germany	

Department of Arts and Sciences

[In the following list the course pursued by each student is indicated by the Italic letters immediately following the name. The signs used are as follows: courses leading to the degree of A.B., *ab*; to the degrees of B.S., *bs* — in Civil Engineering, *ce*; in Structural Engineering, *st e*; in Electrical Engineering, *ee*; in Mechanical Engineering, *me*; in Chemical Engineering, *ch e*. No differentiation is made in the studies of the first two years.

The third column records thehome address, which is in Massachusetts unless stated to be elsewhere. The fourth column gives the address at Tufts College, unless the street is printed in Italics, in which case it is a part of the home address.]

Senior Class

Anderson, Frank William	*ee*	*Meriden, Conn.*	West, 28
Bachelder, Charles Albert	*ee*	*Dorchester Centre*	Paige, 12
Brown, Minot Joseph	*ab*	*W. Somerville*	Paige, 34
Browne, Wolstan Elliot	*st e*	*Abington*	Δ T House
Chapman, Fred Ingalls	*ee*	*Marblehead*	West, 20
Coldrick, Frank Meloon	*ee*	*Tufts College*	*81 Quincy St.*
Cosgrove, John William, Jr.	*ab*	*Medford*	Paige, 21
Couillard, George Ellis	*me*	*Roxbury*	Paige, 8
Daley, Carroll Thomas	*ch*	*Marlboro*	West, 3
Dittrick, Clarence Hoffman	*ee*	*Hudson, O.*	Paige, 24
Dolbear, Benjamin Leslie	*ee*	*Tufts College*	*134 Professors Row*
DuBroy, Arthur Louis	*ee*	*Cleveland, O.*	Paige, 24
Dunn, Joseph Brickley	*ce*	*Dorchester*	Δ T House
Dustin, Charles Ernest	*ce*	*Waterville, Me.*	Δ T House
Edmonstone, William Mathias	*me*	*Everett*	Paige, 11
Gallupe, Harold Quimby	*bs*	*Everett*	*175 Hancock St.*
Gott, Charles	*ab*	*Arlington*	Δ T House
Gray, Bernard Elbert	*ce*	*Medford*	*148 High St.*
Gray, Howard Allison	*st e*	*W. Somerville*	West, 2
Greenwood, Talma Temple	*ee*	*East Templeton*	389 Boston Ave.
Gurney, Elmer Augustus	*bs*	*Marion*	Σ T A House
Hall, George Laird	*ce*	*Somerville*	Δ T House
Hansen, Edwin Henry	*ee*	*Brockton*	203 Prospect St.
Haverley, Raymond	*ce*	*Greenwich, N. Y.*	Curtis, 8
Houghton, Mark Howard	*ce*	*Boston*	Α Τ Ω House
Hussey, Harold Dudley	*st e*	*Danvers*	East, 1
Ireland, Everett Wesley	*ee*	*W. Somerville*	*28 Appleton St.*
Jackson, Leroy Greenwood	*bs*	*Marlboro*	West, 6
Kean, Charles Douglas	*ab*	*Dorchester*	Paige, 3
Kinsman, Osgood Stevens	*ce*	*Cambridge*	*26 Upland Rd.*

Knight, Robert Mossman, A.B.1910	*ee*	*Tufts College*	*114 Professors Row*
Little, William Parker	*ee*	*Willimantic, Conn.*	Θ Δ X House
MacCurdy, Elmo Douglas	*bs*	*Somerville*	*27 Bay State Ave.*
MacKay, James Calvin	*ee*	*Waltham*	West, 11
MacPhie, Elmer Ira	*bs*	*Winchester*	Δ T Δ House
Mann, Joseph Frederick Thiele	*ee*	*Boston*	Δ T House
Marshall, Lawrence Kennedy	*ce*	*W. Medford*	West, 16
McLane, Allen Friend	*st e*	*Roxbury*	Θ Δ X House
Mergendahl, Charles Henry	*st e*	*Tufts College*	*9 Bellevue St.*
Miller, Harold De Carterette	*ee*	*Wakefield*	A T Ω House
Moffitt, Harold Eugene	*ab*	*Malden*	Paige, 5
Morton, Joseph Webster	*ab*	*Somerville*	*33 Pearson Rd.*
Nason, Walton Hooker	*ce*	*N. Billerica*	Δ T House
Neagle, Russell Jewett	*ee*	*Medford*	*52 Bradshaw St.*
Nelson, Harold Arthur	*st e*	*Mentone, Calif.*	94 Curtis St.
Richert, George David	*ab*	*W. Medford*	West, 27
Ritschy, Donald Percy	*ce*	*Brooklyn, N. Y.*	A T Ω House
Skillin, Fred Burgess	*ce*	*W. Somerville*	Paige, 22
Stevens, Harold Francis	*ee*	*Medford*	*87 Marshall St.*
Sullivan, Daniel Maynard	*ce*	*E. Boston*	West, 9
Thibodeau, Earle Thomas	*ab*	*Norway, Me.*	118 Salem St., Medford
Thompson, Leonard Shute	*ab*	*Malden*	Δ T Δ House
Towne, Edward Martin	*ee*	*Andover*	West, 11
VanDemark, Ernest Snyder	*st e*	*High Falls, N. Y.*	West, 6
Vincent, Max Golden	*ee*	*Girard, Pa.*	Dean, 13
White, Alfred Baylies	*bs*	*Taunton*	Z Ψ House
Whiting, Lewis Morton	*ee*	*Accord*	West, 1
Whitney, Carrol Nathan	*ch e*	*W. Somerville*	West, 2
Williams, Charles Hermon	*st e*	*Salem*	Curtis, 8
Willis, Ralph Loring	*bs*	*Three Rivers*	Dean, 13
Winship, Sylvanus Davis	*st e*	*Auburn, Me.*	Δ T Δ House
Wise, Russell Perin	*ee*	*West Newton*	96 Packard Ave.

Junior Class

Amsden, Clifford Neal	*ce*	*South Boston*	A T Ω House
Anderson, Arthur Julius	*st e*	*S. Manchester, Conn.*	Δ T House
Atwater, Harry Arthur	*ch e*	*Somerville*	*1 Avon St.*
Bacon, Charles Aaron	*ce*	*Bedford*	Σ T A House
Bailey, Ernest Wing	*st e*	*Medford*	*7 Taylor St.*
Bicknell, Harry Irving	*ee*	*Weymouth*	Commons Club
Blagbrough, Vernon Edmund	*ab-bd*	*Orange*	Paige, 18
Bogue, Robert Herman	*bs*	*Tufts College*	*29 Capen St.*
Bragdon, Ralph Hasty	*ab*	*S. Boston*	*5 Pacific St.*

Brandt, Arthur Williams	*st e*	*Ontario Centre, N. Y.*	East, 29
Brigham, Ferdinand	*ab*	*S. Framingham*	Δ T Δ House
Brown, Stanley Morton	*st e*	*Chelsea*	A T Ω House
Bruerton, Courtney	*ab*	*Malden*	*96 Cedar St.*
Bugbee, Edwin Percy	*ee*	*Methuen*	West, 26
Bugbee, Ralph Lawrence	*ee*	*Methuen*	West, 26
Butler, Benjamin Jarvis	*ee*	*Somerville*	*103 Bartlett St.*
Doble, Frank Currier	*ee*	*Methuen*	Paige, 7
Fisher, Austin Wellington	*ab*	*Fitchburg*	Θ Δ X House
Frost, Walter Sprague	*bs*	*Roxbury*	A T Ω House
Fuller, Philip Ely	*ce*	*Thorndike*	Commons Club
Glasier, Arthur Franklyn	*bs*	*Roxbury*	*25 Bainbridge St.*
Greenough, Maurice Brown	*st e*	*Groveland*	Commons Club
Haley, James Joseph	*ce*	*Lowell*	West, 11
Hamill, George Keenan	*ch e*	*Stoneham*	*18 Park St.*
Harris, Nathan Conant	*ce*	*Auburn, Me.*	Δ T House
Herrick, Ralph Morris	*st e*	*Allston*	Dean, 7
Hooper, Allen Gunnison	*ab-e*	*Tufts College*	*124 Professors Row*
Hudson, Herbert Harold	*ee*	*Boxford*	West, 4
Hulen, Bertram Dyer	*ab*	*Cliftondale*	Δ T Δ House.
Jackman, Irving Wilson	*me*	*Cambridge*	*166 Chestnut St.*
Jones, William Moshier	*ce*	*Swampscott*	West, 23
Killion, William Vincent	*ce*	*Malden*	*130 Russell St.*
Lamont, Richard Roy	*ab*	*W. Somerville*	*13 Conwell Ave.*
Larrabee, Ernest Alonzo	*me*	*Marlboro*	Commons Club
Libby, John Edgar	*ab*	*Auburn, Me.*	Dean, 8
Lynch, John Francis	*ab*	*N. Cambridge*	*1 Cedar Sq.*
MacKillop, Daniel Alexander	*e*	*Grand River Falls, N. S.*	7 Cortes St., Boston
Mackin, Clarence Harvey	*ab*	*Manchester*	A T Ω House
Mansfield, Lloyd Lewis	*ce*	*Swampscott*	East, 28
Marble, Earl Robert	*ch e*	*Attleboro*	Σ T A House
Martins, Joseph da Silveira	*ee*	*Azores Islands*	West, 19
Maulsby, William Shipman	*ab*	*W. Somerville*	*80 Curtis St.*
McCollester, Parker	*ab*	*Detroit, Mich.*	Z Ψ House
McKenna, William Joseph	*bs*	*Winthrop*	West, 20
Medeiros, Roger Maria de Carvalho	*ee*	*Azores Islands*	West, 19
Merrill, Frank Wood	*st e*	*W. Somerville*	*90 Curtis St.*
Murray, Clifford Robert	*ce*	*Wethersfield, Conn.*	West, 22
Page, Roland Humphrey	*st e*	*Boston*	West, 29
Patten, Francis Howard	*ee*	*Marion*	Σ T A House
Phalen, Harold Romaine	*me*	*Acton*	Σ T A House
Phelps, Edward Parkhurst	*ch e*	*Greenwood*	Paige, 20
Quennell, Alvin William	*ee*	*Roxbury*	West, 29

Salls, David Max Albert	*e*	*Canton, N. Y.*	Capen & Bellevue Sts.
Savage, Percy Godfrey	*bs*	*Medford*	*15 Lapham St.*
Schwartz, Samuel	*st e*	*E. Billerica*	139 Morrison Ave., W. Somerville
Shaw, Irving Roland	*bs*	*Palmer*	Z Ψ House
Swenson, Ernest Siegfried	*ab*	*Medford*	Δ T House
Weber, Harry Oscar	*st e*	*South Wales, N. Y.*	Σ T A House
West, John Albert	*ch e*	*Medford*	East, 29
Williams, Clifford Elliot	*ce*	*Willimantic, Conn.*	Commons Club

Sophomore Class

Adams, John Harold	*e*	*Passaic, N. J.*	East, 20
Allen, Herbert Joseph	*bs*	*Ayer*	West, 32
Andrews, Howard Baker	*bs*	*Providence, R. I.*	19 Powder House Terrace, W. Somerville
Atwater, Ralph Wight	*e*	*Somerville*	*1 Avon St.*
Azevedo, Renato de Almeida	*e*	*Sao Paulo, Brazil*	90 Curtis St.
Benson, Harry Oscar	*e*	*Everett*	*29 Oliver St.*
Blanchard, Frank Nelson	*ab*	*Tufts College*	*2 Curtis Ave.*
Bush, Vannevar	*e*	*Chelsea*	West, 16
Carter, Louis Hayward	*bs*	*E. Weymouth*	Δ T House
Colman, Roger Ammiel	*e*	*Somerville*	*151 Central St.*
Coombs, Harry	*e*	*Tufts College*	East, 30
Davis, Albert William	*bs*	*S. Boston*	*146 L St.*
Dennett, George Franklin	*e*	*Cambridge*	Paige, 14
Echeverria, Carlos Porfirio	*e*	*Mexico City, Mex.*	110 Hunt Ave., Boston
Ellms, Carlton Warren	*e*	*S. Sudbury*	Δ T House
Etheridge, Harold Lowell	*e*	*Somerville*	Z Ψ House
Fairbank, Parker Wheeler	*e*	*Sudbury*	Σ T A House
Fairbanks, Frank Bates	*ab-e*	*Passaic, N. J.*	East, 20
Fisher, George	*e*	*Boston*	*50 Salem St.*
Flint, Fred Warren	*e*	*W. Somerville*	*22 Dover St.*
Freeman, Harris Howard	*e*	*Somerville*	*24 Bonner Ave.*
Gaskin, William	*ab-bd*	*Dixfield, Me.*	Paige, 25
Goodwin, Joseph Michael	*e*	*Stoneham*	*35 Pleasant St.*
Green, Thomas Henry	*e*	*Winthrop*	West, 27
Harrington, Rufus Frost	*bs*	*Medford*	*21 College Ave.*
Hartshorn, Carl Larrabee	*e*	*W. Somerville*	East, 7
Hazeltine, Burt Alden	*e*	*W. Somerville*	*20 Day St.*
Henderson, William Davis	*e*	*Tompkinsville, N. Y.*	East, 15
Henry, David Edward	*e*	*Dorchester*	Δ T House
Higgins, Reuben, Jr.	*e*	*S. Portland, Me.*	West, 22
Johnson, Philip Woodbury	*e*	*Methuen*	West, 15

Kattelle, Laurence Watson	*e*	*W. Newton*	West, 15
Keegen, John Louis	*ab*	*Brookline*	West, 12
Kendall, Harrison Shattuck	*e*	*Waverley*	*146 Mill St.*
Lawlor, James Joseph	*e*	*Chelsea*	*108 Auburn St.*
Lloyd, George Adolph	*e*	*Somerville*	*68 Albion St.*
Lovering, Stanley Hutchinson	*e*	*W. Medford*	*42 Harvard Ave.*
Lowe, Robert Manning	*ab*	*Rockport*	A T Ω House
Mansfield, Robert Chapman	*e*	*Swampscott*	East, 28
Marden, Leslie Ona	*e*	*W. Somerville*	*20 Powder House Ter.*
McAuliffe, John Augustin	*e*	*Dorchester*	East, 18
McCarthy, Joseph Augustine	*ab*	*N. Andover*	West, 30
Monge, Louis Ernest	*e*	*Quito, Ecuador*	Paige, 32
Mountfort, Sumner Leighton	*e*	*Portland, Me.*	West, 31
Nickerson, Roy Gilchrist	*bs*	*Provincetown*	Z Ψ House
Nolan, Conrad	*e*	*Jacksonville, Fla.*	120 Curtis St.
Olson, Edward Frederick	*e*	*Medford*	*79 Medford St.*
Page, Fred Odell	*ab*	*Plainfield, Vt.*	49 Bromfield Rd.
Parker, Levi Wright	*e*	*Somerville*	*45 Dartmouth St.*
Pecker, Albert David	*e*	*Marblehead*	Paige, 1
Phelps, Harry Louis	*e*	*Marlboro*	Paige, 10
Phillips, Wendell Codding	*e*	*Dedham*	Dean, 11
Prentiss, John Herbert	*e*	*Belmont*	*206 Prospect St.*
Proctor, Percy Maynard	*bs*	*N. Cambridge*	Z Ψ House
Risegari, George	*e*	*Somerville*	*28 Claremon St.*
Roberts, Raymond Moulton	*e*	*Melrose Hlds.*	*124 Franklin St.*
Rogers, Clarence Bloss	*e*	*Allston*	West, 24
Rorty, James Hancock	*ab*	*Middletown, N. Y.*	Z Ψ House
Russell, Cyrus Johns	*e*	*W. Somerville*	West, 13
Sargent, Ralph Edward	*e*	*Annisquam*	East, 9
Schreiber, Herman Louis	*e*	*Jamaica Plain*	*13 Bishop St.*
Scott, Keith	*bs*	*Cambridge*	Paige, 28
Searle, Dana Aubrey	*e*	*Franklin*	West, 28
Shute, Philip Cushing	*ab*	*Salem*	Dean, 11
Sokolovsky, Jacob Max	*e*	*Boston*	Paige, 26
Sterling, Lewis Edwin	*e*	*Everett*	West, 14
Strecker, Harry Louis	*e*	*Roxbury*	*84 Walnut Ave.*
Strong, William Millgrove	*bs*	*Everett*	Paige, 35
Stryker, Henry Bernard	*e*	*Cambridge*	West, 14
Taylor, Prentiss Willard	*e*	*Hinsdale, N. H.*	West, 25
Tosi, Joseph Andrew	*e*	*Revere*	Δ T House
Tower, Henry Edward	*e*	*Hudson*	West, 13
Whippen, Leonard Swan	*e*	*Kingston, N. H.*	Σ T A House

Freshman Class

Abbott, Porter Sheldon	*e*	*Somerville*	*85 Cross St.*
Ahern, Frank Leo	*e*	*Somerville*	*26 Robinson St.*
d'Albergaria, José Soares	*e*	*Azores Islands*	16 Dearborn Road
Alexander, Charles Winthrop	*e*	*Roxbury*	Curtis, 11
Avery, Walter Roger	*e*	*Roslindale*	Curtis, 7
Ayer, Perley Fay	*e*	*Portland, Me.*	West, 31
Babcock. Lester Fowler	*e*	*Lynn*	East, 14
Bathrick, Orrin Freeborn	*e*	*Tufts College*	*15 Emery St.*
Bayer, Abraham Henry	*e*	*Boston*	*38 Seneca St.*
Bennett, William Joseph	*e*	*W. Medford*	*65 Lincoln St.*
Billingham, Arthur	*bs*	*Jamaica Plain*	*15 Goldsmith St.*
Campbell, Donald Kenneth	*ab*	*Tyngsboro*	Curtis. 3
Carter, Herbert Melville	*bs*	*Norwood*	East, 15
Chandler, Joel Lorenzo	*ab*	*Albany, N. Y.*	21 Hillsdale Rd.
Chandler, Warren Rufus	*bs*	*Medford*	*6 Ashland St.*
Charnock, Percy Clyde	*e*	*Tufts College*	*50 Quincy St.*
Cosgrove, Frederick Sylvester	*bs*	*Medford*	*87 Otis St.*
Costanza, George	*ab*	*Boston*	*309 North St.*
Crispin, Russell Milton	*e*	*W. Somerville*	*31 Chandler St.*
Davison, Russell Lee	*ab*	*No. Billerica*	Curtis, 9
Dearborn, Fred Earle	*e*	*Canterbury, N.H.*	9 Bellevue St.
Dickinson, Roy Willis	*ab*	*Wiscasset, Me.*	Paige, 13
Dillingham, Paul	*ab*	*Bridgeport, Conn.*	West, 32
Dohanian, Senekerim Mardiros	*bs*	*Somerville*	*252 Summer St.*
Dole, John Walter	*ab*	*Enfield, N. H.*	East, 16
Donovan, Joseph William	*e*	*Dorchester*	*12 Bellflower St.*
Eastman, Fred Cecil	*e*	*Swampscott*	West, 10
Elliott, George Porter	*e*	*Newburyport*	*6 Dalton St.*
Feeley, Edward	*bs*	*Brookline*	West, 12
Felker, John Clarence Rea	*ab*	*Burlington, Iowa*	1 Arnold Circle, Cambridge
Ferraz, Raul de Oliveira	*e*	*Sao Paulo, Brazil, S. A.*	90 Curtis St.
Field, Herbert Vaughan	*bs*	*W. Somerville*	Θ Δ X House
Files, James Holden	*ab*	*Portland, Me.*	East, 24
Fillmore, Millard Asa	*e*	*Stow*	East, 34
Flynn, Evans Whitelaw	*e*	*Dorchester*	*11 Page St.*
Ford, Frederick William, Jr.	*e*	*Medford*	East, 4
Foss, Clarence Wardwell	*e*	*W. Lynn*	Curtis, 12
French, Joseph Allen	*e*	*Waltham*	East, 23
Gaffey, Edward Andrew	*ab*	*Medford*	*19 Curtis St.*
Garabedian, Carl Arshak	*e*	*Dorchester Centre*	East, 25
Gardella John Louis	*e*	*Brookline*	*115 Washington St.*

Gardner, Herbert Whiting	*e*	*Somerville*	*135 Lowell St.*
Geer, Everett Austin	*e*	*Three Rivers*	West, 3
Gendron, Courtenay Holbrook	*ab*	*Winchester*	*22 Calumet Rd.*
Gillespie, Norman Wilkinson	*ab*	*Dorchester*	*683 Columbia Rd.*
Ginn, Robert Leicester	*bs*	*West Harwich*	8 Willow Ave., W. Somerville
Godfrey, Archiebald Joseph	*bs*	*Swampscott*	*48 Farragut Rd.*
Goldman, Abraham Hyman	*e*	*Boston*	*29 Lowell St.*
Gould, Charles Thomas	*e*	*Cambridge*	*35 Tufts St.*
Greenbaum, Arthur	*bs*	*Beachmont*	*73 Crescent Ave.*
Grupe, Howard Edwin	*e*	*New Canaan, Conn.*	Dean, 4
Gurvin, John Edward	*e*	*Somerville*	*6 Wilson Ave.*
Hall, Walton Shepard	*ab*	*Malden*	*23 Park St.*
Harlow, Leslie Kimball	*e*	*Somerville*	*17 Crocker St.*
Harvey, Will Calvin	*ab-bd*	*Newfane, Vt.*	Paige, 27
Hayward, Alfred Webster	*e*	*W. Somerville*	*5 Windom St.*
Hebb, Edwin Elijah	*e*	*Roslindale*	East, 34
Hicks, George Everett	*bs*	*Winchester*	East, 22
Hill, Ralph Weston	*e*	*Peabody*	East, 25
Hodges, Theodore Warren	*bs*	*Lynn*	Dean, 12
Houston, Clarence Preston	*e*	*Methuen*	Curtis, 9
Hughes, Charles Thomas	*bs*	*Somerville*	East, 17
Hughes, John Parnell	*ab*	*Winthrop*	Dean, 8
Hunnewell, William	*e*	*Somerville*	*23 Milton St.*
Huntington, Paul Osborne	*e*	*Ayer*	West 23
Hurley, William Joseph	*e*	*Belmont*	*20 Cross St.*
Hussey, William Horner	*e*	*Danvers*	East, 1
Ingalls, Herbert Elliott	*e*	*Lynn*	West, 4
Isola, Vico Cacciatori	*bs*	*Waban*	Θ Δ X House
Jackson, Henry Olin	*e*	*Southbridge*	West, 1
Jones, Walter Leverett	*e*	*Somerville*	East, 7
Joslin, Richard Carlton	*ab*	*Keene, N.H.*	720 Broadway, W. Somerville
Kearns, William Henry	*e*	*Waverley*	*88 Beech St.*
Kelley, Walter Leonard	*e*	*Arlington*	*30 Cleveland St.*
Kerigan, Joseph Edward	*e*	*Springfield*	East, 11
Kett, Timothy Justin	*e*	*Fair Haven, Vt.*	East, 5
Kindred, James Ernest	*bs*	*So. Boston*	*613 E. 7th St.*
Kingman, Stanley Russell	*e*	*W. Somerville*	East, 6
Kopchovsky, Simon	*bs*	*Roxbury*	*121 Howland St.*
Lewis, William Albert	*bs*	*Boston*	*31 Allen St.*
Loomis, Glenn Moore	*e*	*Goff's Falls, N. H.*	East, 14
MacPherson, Edmund Stow	*e*	*Maynard*	East 21

Marshall, Edward Lester	*e*	*Lynn*	East, 31
Martin, Abner Waldo	*e*	*Salem*	West, 25
Mastrangelo, Michael Joseph	*e*	*Boston*	*3 North Sq.*
Maulsby, Francis Ayer	*ab*	*W. Somerville*	*80 Curtis St.*
McDonald, John Cabot	*bs*	*Central Aguirre*	38½ Baldwin St., Cambridge
Mendes, Hugh Martin	*bs*	*Port of Spain, Trinidad, B. W. I.*	West, 18
Merrill, Norman Jesse	*e*	*Somerville*	*26 Brastow Ave.*
Metcalf, Herbert Edmond	*bs*	*Taunton*	106 Rogers Ave., Somerville
Miller, Everett Burton	*e*	*Meriden, Conn.*	Curtis, 10
Monighan, Joseph Albert	*e*	*Dorchester*	*14 Maryland St.*
Nelligan, Henry Philip	*bs*	*Cambridge*	*413 Washington St.*
O'Meara, Francis	*e*	*Brighton*	*72 Mapleton St.*
O'Neill, Carroll Charles	*e*	*Allston*	*119 Franklin St.*
Palumbo, Emilio Leonard	*e*	*Boston*	*19 Cooper St.*
Perkins, Kaler Alfred	*e*	*E. Saugus*	*28 Wendell St.*
Peterson, Leon William	*e*	*Everett*	*15 Carter St.*
Porter, Frederick Wadsworth	*bs*	*Springfield*	Dean, 10
Porter, Leslie Ross	*e*	*Peabody*	Dean, 7
Power, Harold James	*e*	*Everett*	*18 Clinton St.*
Powers, Clarence Schlayer	*e*	*Meriden, Conn.*	Curtis, 10
Prentiss, Joseph Adams	*e*	*Belmont*	*206 Prospect St.*
Prescott, Clarence Dean	*ab*	*Haverhill*	East, 21
Proud, Charles Walter	*e*	*Everett*	East, 2
Ramsay, Harold Southwood	*e*	*Woodfords, Me.*	West, 31
Rice, Perley Augustus	*e*	*W. Somerville*	East, 6
Rice, Virgil Allen	*e*	*Cambridge*	*159 Lakeview Ave.*
Ricker, George Alvan	*bs*	*South Poland, Me.*	Dean, 12
Rindge, Wellington	*bs*	*Cambridge*	Θ Λ X House
Robbins, Roger Sherman	*bs*	*E. Pepperell*	Curtis, 8
Robnett, Edwin Howard	*e*	*Tyler, Texas*	Δ T Δ House
Rockett, Francis Haynes	*e*	*Hingham*	East, 6
Rounds, Harold James	*e*	*Beachmont*	
Rutter, Josiah Baldwin	*e*	*Waltham*	East, 23
Sanborn, Ray Conway	*e*	*Dorchester*	Curtis, 5
Sanerib, Jacob	*e*	*Roxbury*	East, 12
Savage, Harold Richardson	*bs*	*Medford*	*15 Lapham St.*
Scott, Clinton Lee	*ab-bd*	*Newport, Vt.*	Paige, 15
Scott, Larkin Burl	*e*	*Abilene, Texas*	West, 5
Shea, Thomas Arthur	*e*	*Stoneham*	*54 Pine St.*
Shiels, Joseph Daniel	*e*	*Boston*	*25 Hemenway St.*
Shortell, Joseph Henry	*bs*	*Salem*	East, 13

Silverman, Max	*e*	*Dorchester*	*26 Lawrence Park*
Smith, Parker Bradstreet	*bs*	*Auburn, Me.*	Dean, 10
Smith, Robert Ashley	*ab*	*Hardwick, Vt.*	Dean, 14
Smith, Stanley Howard	*e*	*Dedham*	East, 27
Smith, Walter Delos	*ab*	*Peabody*	*6 Park St.*
Smith, William Paine	*ab*	*Beverly*	West, 16
Stewart, Arthur David	*e*	*Hopkinton*	389 Boston Ave.
Strahlmann, Louis	*bs*	*San Diego, Cal.*	16 Westland Ave., Boston
Street, John Bryden	*e*	*Medford*	East, 4
Sturtevant, Leon J.	*bs*	*Lexington*	*3 Hancock Ave.*
Sullivan, Harry Matthew	*bs*	*Ayer*	West, 30
Sullivan, Louis Edmund	*e*	*Maynard*	*17 Maple St.*
Tattan, John David	*e*	*Somerville*	*458 Somerville Ave.*
Tegan, Michael Joseph, Jr.	*e*	*Charlestown*	*23 Green St.*
Terhune, Howard Haven	*e*	*Dorchester*	East, 32
Thacher, Lester Enoch	*bs*	*Dorchester*	Dean, 14
Torrey, William Henshaw	*e*	*Spencer*	*18 Pleasant St.*
Towsley, Frank Hathaway	*ab*	*Washington, Vt.*	East, 16
Tukey, Norman Stanford	*ab*	*Somerville*	East, 17
Turner, Nelson Webster	*bs*	*Ayer*	*7 East Main St.*
Weaver, Frederic Nixon	*e*	*Dorchester*	East, 18
Whippen, Joseph Gordon	*e*	*E. Lynn*	Σ T A House
Whitcomb, Herbert Hartwell	*e*	*Littleton*	
White, Merritt Oberlin	*e*	*Clintonville, Ohio*	Δ T Δ House
Whittemore, Francis Dyer	*e*	*Everett*	*29 Locust St.*
Williams, Harold Jenkin	*bs*	*Quincy*	*74 Common St.*
Wilton, Carl Andrew	*bs*	*W. Somerville*	*30 Farragut Ave.*
Woode, Alva Vivian	*ab*	*Kingston, Jamaica*	Paige, 11

Special Students

Acone, Theobald Alfonso		*Boston*	*419 Hanover St.*
I. *Medical Preparatory.*			
Smith, Wayne Carrington		*Meriden, Conn.*	Dean, 4
I. *English*			
Smith, Walter Delos		*Peabody*	*6 Park St.*
I. *Language*			

Supplementary List

[Students present during 1909-10, but not appearing in the catalogue]

Barry, John Joseph	*sp*	*Lawrence*	*7 Chase St.*
Loftus, Elizabeth Marie	*sp*	*Dorchester*	Start 1
Mann, Anna Robeson	*ab*	*Norfolk*	
Newhall, Arthur Brock	*me*	*W. Somerville*	*10 Powder House Terrace*

Raygada, Pedro E.	*sp*	*Payti, Peru* 93 St. Botolph St., Boston	
Rogers, Clarence Bloss	*bp*	*Allston*	*1245 Commonwealth Ave.*
Snushall, Wilson	*sp*	*Arlington*	
Steele, Frederic Lincoln, Jr.	*ab*	*Cincinnati, O.*	West, 21

Theological School

THREE-YEAR COURSE

Second Year

Wilmot, Frederick Algernon, A.B. (Harv.) '09	*Boston*	Paige, 17

FOUR-YEAR COURSE

First Year

Robertson, Forbes William	*Arlington*	Paige, 28

SIX-YEAR COURSE

Fourth Year

Blagbrough, Vernon Edmund	*Orange*	Paige, 18

Second Year

Gaskin, William	*Dixfield, Me.*	Paige, 25

First Year

Harvey, Will Calvin	*Newfane, Vt.*	Paige, 27
Scott, Clinton Lee	*Newport, Vt.*	Paige, 15

Special Students

Hale, Arthur Thomas	*Lawrence*	Paige, 19
Mann, Horatio Gardner	*Rockland*	Paige, 36
Porter, John Edwards	*Tufts College*	Paige, 30
Rose, William Wallace	*Philadelphia, Pa.*	Paige, 29

Bromfield-Pearson School

Carlson, Carl Oscar	*Quincy*	*40 Saville Ave.*
Magee, Joseph Vincent	*So. Boston*	*726 Third St.*
Mendelsohn, Louis Edward	*Roxbury*	*85 Brunswick St.*
Merry, Ralph Elwyn	*W. Somerville*	*41 Dover St.*
Nason, Dura Wadsworth	*Everett*	*66 Woodville St.*
Rogers, Newell Willard	*Boston*	West, 24
Stafford, Roland Grover	*Attleboro*	East, 22

Jackson College

Senior Class

Baker, Gladys Louise	*ab*	*Provincetown*	Metcalf, 1
Bickford, Katharine Neal	*ab*	*Danvers*	Start, 6
Duffey, Audrey Lovejoy	*ab*	*Medford*	Metcalf, 15
Granger, Laura Lucina	*bs*	*Winsted, Conn.*	Start, 7
Hearsey, Evelyn	*ab*	*Gleasondale*	Metcalf, 8
Knight, Sue Levina	*ab*	*Westmoreland, N. H.*	Metcalf, A
Mulry, Mary Stanton	*ab*	*Methuen*	Metcalf, B
Sawyer, Mildred Beatrice	*ab*	*Malden*	*22 Baker St.*
Shorley, Marion Christine	*ab*	*Winthrop*	*19 Bellevue Ave.*
Sturtevant, Edith Marian	*bs*	*Lexington*	Start, 7
Wilbur, Gladys Maude	*ab*	*Providence, R. I.*	Metcalf, 4

Junior Class

Bradford, Edith Harriet	*ab*	*Somerville*	*272 Summer St.*
Brooks, Marion Louise	*ab*	*W. Medford*	*47 Auburn St.*
Day, Ruth Lewis	*ab*	*E. Boston*	*133 Princeton St.*
Entwistle, Dorothy Russell	*ab*	*Everett*	*55 Harvard St.*
Fuller, Lena Frances	*ab*	*Everett*	*63 Cottage St.*
Henry, Marjorie Leslie	*ab*	*Jamaica Plain*	*79A Sheridan St.*
Jones, Elaine	*ab*	*Tufts College*	15 Bellevue St.
Lamprey, Pauline Adriana	*ab*	*Medford*	*11 Fulton St.*
Moyer, Ruth	*ab*	*Hartford, Conn.*	Metcalf, 2
Patterson, Marjorie Bonner	*ab*	*Franklin*	Metcalf, 14
Shepard, Bertha Maria	*ab*	*Everett*	Metcalf, 15
Spear, Alice Josephine	*ab*	*Hyde Park*	Start, 3
Steinberg, Antonia Adeline	*ab*	*Webster*	Metcalf, B
Vande Bogert, Edith Marguerite	*ab*	*Bearsville, N. Y.*	14 Winthrop St., Winchester
White, Hazel	*ab*	*Somerville*	Metcalf, 4
Wilde, Zilpah	*ab*	*W. Somerville*	*12 Raymond Ave.*
Woodbury, Edna Currier	*ab*	*Somerville*	*9 Howe St.*

Sophomore Class

Berthold, Louise Anna	*ab*	*Saugus*	*392 Main St.*
Chapin, Octavia	*ab*	*Medford*	*102 Summer St.*
Colby, Marion Adeline	*ab*	*Hillsboro, N. H.*	Metcalf, 13
Dodd, Mary Helen	*bs*	*Lexington*	*14 Sherman St.*
Field, Abby Howard Rugg	*ab*	*Providence, R. I.*	Metcalf, 7

Foster, Marion Fenwick	*ab*	*W. Somerville*	*11 Whitfield Rd.*
Gardner, Pauline	*ab*	*Salem*	Richardson, 6
Gray, Inez Marion	*ab*	*Portsmouth, N. H.*	Metcalf, 13
Green, Marion Adelaide	*ab*	*Everett*	*35 Dean St.*
Greenberg, Rose	*ab*	*W. Somerville*	*18 Rogers Ave.*
Huntington, Frances Willard	*ab*	*Lynn*	*64 Tudor St.*
Lenhart, Edith Rose	*ab*	*Bedford*	Richardson, 4
Lovejoy, Esther Lizzie	*ab*	*W. Somerville*	*62 Rogers Ave.*
Martin, Helen Julia	*bs*	*Plainfield, Vt.*	Metcalf, 7
Owler, Isabella Gertrude	*ab*	*Somerville*	*30 Browning Rd.*
Penniman, Ruth Evelyn	*ab*	*Peabody*	Start, 4
Phillips, Etta Marion	*bs*	*Lowell*	Start, 4
Ritchie, Effie May	*ab*	*W. Somerville*	Metcalf, 3
Scammon, Helen Rachel	*ab*	*Stratham, N. H.*	Metcalf, 12
Smith, Lilian Cora	*ab*	*Kensington, N. H.*	Metcalf, 12

Freshman Class

Anderson, Mildred Elvera	*ab*	*S. Manchester, Conn.*	Metcalf, 6
Ashworth, Margaret	*bs*	*Waldoboro, Me.*	Metcalf, 11
Buck, Margaret	*ab*	*Lexington*	*20 Forest St.*
Butler, Helen Louise	*bs*	*W. Medford*	*17 Irving St.*
Cameron, Isabella	*ab*	*Arlington*	*59 Mt. Vernon St.*
Cobb, Gladys Lydia	*ab*	*Mansfield*	Start, 5
Cochrane, Edith Elizabeth	*ab*	*Bath, Me.*	Metcalf, 11
Dailey, Mary Elizabeth	*bs*	*Lexington*	*State Road*
Davey, Katherine Teresa	*ab*	*Lawrence*	Start, 1
Davis, Beatrice Labaree	*ab*	*Webster*	Metcalf, 9
Dooling, Rita Irene	*ab*	*Somerville*	*82 Benton Rd.*
Dyer, Gertrude Weston	*ab*	*Provincetown*	Metcalf, 10
Eveleth, Emily	*ab*	*Little Falls, N. Y.*	Richardson, 4
Fallis, Ethel Hazel	*bs*	*W. Somerville*	Metcalf, 14
Gerry, Gladys Eleanor	*ab*	*Sudbury Centre*	Metcalf, 6
Golden, Annie	*bs*	*Somerville*	*9 Crown St.*
Hearsey, Helen Elizabeth	*ab*	*Gleasondale*	Metcalf, 10
Hooper, Anne Leslie	*ab*	*Tufts College*	*124 Professors Row*
Hulen, Emma	*bs*	*Cliftondale*	Richardson, 10
Jackson, Helen Camille	*ab*	*Medford*	*86 Otis St.*
Kagan, Frances	*ab*	*Roxbury*	*39 Stanwood St.*
Longley, Pearle Emogene	*ab*	*Winchester*	*77 Walnut St.*
Macy, Ella Hazel	*ab*	*Somerville*	*3 Miner St.*
Roberts, Marjorie	*ab*	*Reading*	Richardson, 11
Sanborn, Edith May	*ab*	*Amesbury*	Start, 3
Scamman, Eleanor Margaret	*ab*	*Lexington*	Metcalf, 12
Schofield, Jeannette Irene	*ab*	*Boston*	Richardson, 3

Shepard, Aurilla Myrtle	*ab*	*Mansfield*	Start, 5
Shepard, Ruth	*ab*	*Wakefield*	Metcalf, 16
Waterman, Charlotte Jane	*ab*	*Tufts College*	Metcalf, C
Wedge, Ruth Paris	*ab*	*Lowell*	Richardson, 3
Wells, Edna Frances	*ab*	*Roslindale*	Richardson, 9
Whiting, Minola Marion	*bs*	*Lexington*	*13 Waltham St.*
Wiley, Alma Gertrude	*ab*	*Somerville*	*446 Broadway*

Special Students

Loftus, Elizabeth Marie II. *English*	*Dorchester*	*163 Sydney St.*
Scott, Marjory I. *Science and Language*	*Cambridge*	*Burton Halls, Dana St.*

Medical School

[P. O. Address, 416 Huntington Ave., Boston, Mass.]

Fourth Year

Ahlstrom, Hjalmar . . . . . *Boston*
Barone, Joseph . . . . . *Boston*
Behrman, Roland Augustus . . . . . *Waltham*
Belin, Harry . . . . . *Boston*
Bicknell, Ralph William . . . . . *Canton, Me.*
Blanchard, Paul Drake . . . . . *Oldtown, Me.*
Blount, Samuel Gilbert . . . . . *Providence, R. I.*
Boyd, Francis Peter . . . . . *Brockton*
Boyd, James Francis . . . . . *Brockton*
Brown, Chester Perkins . . . . . *Cambridge*
Buck, Clifton Leon . . . . . *Wilton, Me.*
Cantarow, Daniel, PH.G. (Russia Coll. Ph.) . *Hartford, Conn.*
Cassels, Louis Raymond . . . . . *Attleboro Falls*
Caswell, Walter Wells . . . . . *Boston*
Chandler, Charles Henderson . . . . . *Boston*
Clarke, Thomas Greene . . . . . *Fall River*
Coates, Edward Augustus Jr., ... *Winthrop*
Cohen, Nathaniel Maurice . . . . . *Roxbury*
Comerford, Ethel Frances . . . . . *Athol*
Cooney, Margaret Blanche . . . . . *West Newbury*
Coppinger, Sarah Elizabeth . . . . . *Needham Heights*
Cosgrove, Joseph Justin . . . . . *Hopkinton*
Croke, Louis Ward . . . . . *Dorchester*
Currier, Cyrus Richardson . . . . . *Cambridge*
Dwyer, John Edward, Jr. . . . . *Cambridge*
Edelstein, Samuel . . . . . *Roxbury*
Fennelly, Daniel John . . . . . *Fall River*
Garipay, Ellsworth Peter . . . . . *Holyoke*
Golden, Joseph Francis . . . . . *Roxbury*
Gwinnell, Alfred Weston . . . . . *Boston*
Hagopian, Levon George . . . . . *Boston*
Hartnett, John Henry . . . . . *Worcester*
Henderson, Frank Francis . . . . . *Roxbury*
Hennessey, Thomas Francis . . . . . *Weymouth*
Ireson, Franklin Reynolds . . . . . *Marblehead*
Johnson, Alfred Emile, Jr. . . . . *Dedham*

Johnson, Gertrude Christine . . . . . *S. Manchester, Conn.*
Kaplovitch, Henry . . . . . *Lawrence*
Kelley, Edward Joseph . . . . . *Brookville*
Lussier, Waldo James . . . . . *Woonsocket, R. I.*
Lynch, Henry Edmund . . . . . *Holyoke*
Macaulay, Joseph Arthur . . . . . *Boston*
Mackenzie, Roland Chester . . . . . *Waltham*
MacQueen, James Alen . . . . . *Boston*
Marr, David Finlay . . . . . *Westerly, R. I.*
Marr, Robert McClellan . . . . . *Westerly, R. I.*
Martin, Edward . . . . . *Boston*
McMahon, Francis Joseph . . . . . *Brookline*
Miller, William Henry, A.B. (Lincoln) . . . . *Charleston, S. C.*
Moriarty, John Joseph . . . . . *Danvers*
O'Brien, Frederick William . . . . . *Roxbury*
Oulton, Lamert, PHARM.D. (Mass. Coll. Phar.) *Port Elgin, N. B.*
Owen, Albert Simpson . . . . . *South Framingham*
Pavlo, Samuel George . . . . . *Boston*
Pearl, Samuel Maurice . . . . . *Boston*
Peter, Alphonse Joseph . . . . . *Salem*
Quennell, Willard Leslie . . . . . *Boston*
Quinby, Robert Stanley . . . . . *N. Sandwich, N. H.*
Robertson, Jessie Wilhelmine . . . . . *Arlington*
Ruel, Joseph Adjutor . . . . . *Boston*
Scott, Norman McLean . . . . . *Melrose Highlands*
Seavey, Hollis Lester . . . . . *Cambridge*
Shaw, Celeste Beatrice . . . . . *Newport, N. S.*
Steward, Carleton White, A.B. (Colby) . . . *Rockport, Me.*
Stone, Jane Gray . . . . . *Roxbury*
Strom, Marie Charlotte . . . . . *Cumberland, Me.*
Sullivan, Charles Joseph . . . . . *Randolph*
Tibbetts, Guy Daniel . . . . . *Gloucester*
Waldie, George McLeod . . . . . *Dorchester*
Waterhouse, Roscoe Morgan . . . . . *Somerville*
White, Henry Alverado . . . . . *Taunton*
Willoughby, Earle Carlisle . . . . . *N. Haverhill, N. H.*
Wyman, Edwin Theodore . . . . . *Sebec, Me.*
Young, Annie Roberts . . . . . *S. Berwick, Me.*

Third Year

Albert, Lionel Louis . . . . . *Malden*
Ayers, Charles Elton . . . . . *Taunton*
Barney, Willis Oliver . . . . . *Malden*
Benway, Charles Alfred . . . . . *Somerville*

Brown, Ralph Neally . . . . . *Meredith, N. H.*
Brunelle, Arthur Lord . . . . . *New Bedford*
Colwill, Albert William . . . . . *Magnolia*
PHARM.D. (Mass. Coll. Ph.)
Corvese, Anthony, PH.G. (R. I. Coll. Ph.) . . *Providence, R. I.*
Couch, Mary Catherine . . . . . *Somerville*
Coursey, Frank Rudolph . . . . . *Boston*
Courtney, Thomas Joseph . . . . . *Worcester*
Cummings, Frank Anthony . . . . . *Providence, R. I.*
Curran, John Francis . . . . . *Wheelwright*
Cutler, Myron Fred . . . . . *W. Somerville*
Downie, Charles DeVaudry . . . . . *W. Somerville*
Dunbar, Edgar Joseph . . . . . *Pawtucket, R. I.*
Duncan, Stanley Forbes . . . . . *Wollaston*
Espejo, Gonzalo . . . . . *Merida, Yucatan, Mexico*
Finkel, Samuel Paul . . . . . *Boston*
Finkelstein, Nathan . . . . . *Boston*
Forrest, Erle D. . . . . *Boston*
Fountaine, Ernest Hanson, D.M.D. (1908) . . *Haverhill*
Gechgass, Gershon . . . . . *Chelsea*
Gervais, Harriet Marion . . . . . *Westboro*
Giles, William Benard . . . . . *W. Somerville*
Glunts, David . . . . . *Roxbury*
Greenblatt, Hattie . . . . . *Providence, R. I.*
Howard, Irma Ruth . . . . . *Boston*
Jordan, Harmon Paul Buffum . . . . . *Lincoln, R. I.*
Judd, Ernest Hart . . . . . *W. Hartford, Conn.*
Keely, Mary Agnes . . . . . *Nashua, N. H.*
Kelley, Lawrence Kendall . . . . . *Haverhill*
Kiley, Daniel Joseph, Jr. . . . . *Everett*
Locke, Harry Leslie Franklin . . . . . *Hudson*
MacNaughton, Cordelia Isabella . . . . . *Boston*
Madden, John Joseph, Jr. . . . . *Waltham*
Marcus, Jacob . . . . . *Boston*
Marr, Edward Loring . . . . . *Malden*
McGann, Pierce Powers . . . . . *Somerville*
McWeeny, Bernadette Marie . . . . . *Arlington*
Middleton, Willis Pearl . . . . . *Quincy*
Monaghan, Mary Frances . . . . . *Waltham*
Mysel, Philip . . . . . *Haverhill*
Spinney, Frederic Ira . . . . . *Boston*
Sproat, William Delano . . . . . *Boston*
Stamp, Floyd R. . . . . *Alliance, Ohio*
Stone, Henry Edward . . . . . *S. Boston*

Sweet, John Henry Throop, Jr. . . . . *Hartford, Conn.*
Tully, George William . . . . . *Southbridge*
Turetzky, William Leo . . . . . *Dorchester*
Wellington, Anna Colburn . . . . . *Boston*
Wilson, John Thomas . . . . . *Salem*

Second Year

Ahern, John Francis . . . . . *Dorchester*
Allard, Carlton Eugene . . . . . *Allerton, Iowa*
Allen, Arnold Noble . . . . . *Roslindale*
Allen, Harold Musgrave . . . . . *Boston*
Allison, Carl Edwin . . . . . *Wakefield*
Armitage, Henry George . . . . . *Haverhill*
Balcom, Paul Parker . . . . . *Aylesford, N. S.*
Barrow, Allen Rogers . . . . . *Milford*
Bass, Harris . . . . . *Plymouth*
Bishop, William Atkins . . . . . *Somerville*
Brady, Cecil Norbert . . . . . *Boston*
Brosius, Otto Tiemann . . . . . *Belleville, Ill.*
Brown, Alfred Whittemore . . . . . *Quincy*
Brown, Roy Farrington . . . . . *Provincetown*
Browne, William Edward . . . . . *Brockton*
Brunick, Patrick Vincent . . . . . *S. Boston*
Burack, Abraham . . . . . *Roxbury*
Burke, John Henry . . . . . *Rockland*
Burrell, Harry Cutter . . . . . *Medford*
Cabeceiras, Henry Joseph . . . . . *Somerville*
Caldicott, Francis Stephen . . . . . *Milford*
Chamberlin, Harold Augustus . . . . . *N. Abington*
Chronquest, Alfred Peter . . . . . *Boston*
Clapp, Roger Irving (D.M.D.) . . . . . *Dorchester*
Clarke, Mary Ella . . . . . *Ward Hill*
Clarke, Willis Earl . . . . . *Portland, Me.*
Cleary, Robert Emmett . . . . . *Holyoke*
Comstock, Fred Walter . . . . . *New Haven, Conn.*
Conley, Brainard Francis . . . . . *Ipswich*
Connor, Harold James . . . . . *Woodstock, N. B.*
Corthell, Mary Hill . . . . . *Eastport, Me.*
Costello, James Francis . . . . . *Wollaston*
Covey, Clyde Benjamin . . . . . *Buffalo, N. Y.*
Cowles, Dwight . . . . . *Beverly*
Cullen, Charles Andrew . . . . . *Hyde Park*
Currin, Francis Walter . . . . . *Peabody*
Cutler, Raymond William . . . . . *Worcester*

Davis, Charles Frank, Jr. . . . . *Littleton, N. H.*
Deacy, John Joseph . . . . . *Lawrence*
DeWolf, Charles Wentworth . . . . . *Somerville*
Dolahar, John Edward . . . . . *Boston*
Eames, Helen Tibbetts, A.B. (Mt. Holyoke) . *S. Framingham*
Felch, George Alfred . . . . . *Ayer*
Fitzpatrick, George Edward . . . . . *N. Bellingham*
Flynn, John Henry . . . . . *Salem*
Flynn, Thomas Stephen . . . . . *Woonsocket, R. I.*
Friedman, Benjamin . . . . . *Boston*
Friedman, Eli . . . . . *Boston*
Gale, Eugene Manson . . . . . *Amesbury*
Garrett, William Leo, PH.C. (R. I. Coll. Ph.) . *Providence, R. I.*
Garry, John Joseph . . . . . *Methuen*
Gilman, Samuel Thomas . . . . . *Peabody*
Gilmore, Louis Daniel . . . . . *Exeter, N. H.*
Godvin, Bernard Aloysius . . . . . *Jamaica Plain*
Goetschius, Percy Berry . . . . . *New York, N. Y.*
Gooding, John Harold . . . . . *Boston*
Grogan, Margaret Victorine . . . . . *W. Swanzey, N. H.*
Gunter, Fred Clarke . . . . . *Somerville*
Guthrie, Andrew Doherty . . . . . *Roxbury*
Gwynne, Samuel Carlton . . . . . *Melrose Highlands*
Hassman, David Morris . . . . . *Reading, Penn.*
PHARM.D. (Phila. Coll. Ph.)
Healey, Bernard Charles . . . . . *Boston*
Hynes, Fred Henry . . . . . *New Haven, Conn.*
Jakmauh, Paul John . . . . . *S. Boston*
Jensen, William Christian . . . . . *Worcester*
Kelleher, Simon Bartholomew . . . . . *Cambridge*
Kemp, Lysander Schaffer . . . . . *N. Cambridge*
Kenney, John Francis . . . . . *New Bedford*
Kennington, Henry Carter . . . . . *Boston*
Kenworthy, Marion Edwena . . . . . *Middletown, Conn.*
Kewer, Leo Thomas . . . . . *Waverley*
King, Drue . . . . . *Boston*
Kinsella, Michael Allen . . . . . *Auburn, N. Y.*
Largay, Arthur Owen . . . . . *Bangor, Me.*
Leary, Alfred James . . . . . *Gilbertville*
Lemay, Alfred Mederic . . . . . *Marlboro*
Lennon, John Marcus H. . . . . *Jamaica Plain*
Levek, Joseph . . . . . *Lawrence*
Lyle, Eveline Burton, A.B. (Mt. Holyoke) . . *Gloucester*
MacKenzie, James Alexander . . . . . *Louisville, N. S.*

Macomber, Clarence Alden . . . . . *Pittsfield, Me.*
Margolis, Barney Joseph . . . . . *New Bedford*
Marsh, Harold Edward . . . . . *Quincy*
Martin, William Richard . . . . . *Spencer*
McCoart, Richard Felix, Jr. . . . . *Rumford, R. I.*
McFee, Raymond Frank . . . . . *Woonsocket, R. I.*
McGill, Chester Francis . . . . . *Marlboro*
McPherson, Sidney Horace . . . . . *Roxbury*
Merrill, Everett Albert . . . . . *Bridgton, Me.*
Metcalf, Richard . . . . . *Winthrop*
Miniter, Francis Gabriel . . . . . *Medford*
Moncrieff, William Armitage . . . . . *New Bedford*
Moore, Mary Teresa Veronica . . . . . *Roxbury*
Murphy, Daniel Francis . . . . . *Waltham*
O'Brien, Edward Joseph, Jr. . . . . *E. Boston*
O'Malley, Charles Francis . . . . . *Clinton*
Pavlides, Socrates Yakovos . . . . . *Boston*
Phaneuf, Louis Eusebe . . . . . *Ware*
PHARM.D. (Mass. Coll. Ph.)
Pigott, Arthur . . . . . *Winthrop*
Powers, James Joseph . . . . . *Manchester, N. H.*
Record, Harold Roland . . . . . *E. Braintree*
Reed, Beatrice Alma . . . . . *S. Boston*
Regan, James Joseph . . . . . *S. Boston*
Roderick, Charles Elvin . . . . . *Taunton*
Rodriguez, Enrique . . . . . *Barranguilla, Colombia, S.A.*
Sabine, Harold John . . . . . *Brockton*
Schön, Edward . . . . . *Boston*
Sewall, Edgar Floyd . . . . . *Greenland, N. H.*
Sheridan, Philip Edward Anthony, A.B., 1908 . *S. Boston*
Silva, Savero Pacheco . . . . . *New Bedford*
Simmons, Ralph Hayward . . . . . *Brockton*
Simonds, Frederick Artemas . . . . . *Wakefield*
Sullivan, Daniel Aloysius . . . . . *Lawrence*
Sullivan, Frank Cornelius . . . . . *Lawrence*
Swig, Israel . . . . . *Taunton*
Thoennes, Matthew Nicholas . . . . . *Dorchester*
Tobey, Henry Pratt . . . . . *Great Barrington*
Trachtenberg, Julius Caesar . . . . . *Boston*
Varrell, William Walton . . . . . *York Harbor, Me.*
Ventrone, Anthony Caesar . . . . . *Providence, R. I.*
PH.C. (R. I. Coll. Ph.)
Wainshel, Perez William . . . . . *Lynn*
Weatherbee, George Bradford . . . . . *Lee, Me.*

Weber, Willis Fletcher . . . . . *S. Wales, N. Y.*
Wheet, Harry Ray . . . . . *Somerville*
Wilson, Charles Henry . . . . . *Chelsea*
Wood, Harvey Nichol . . . . . *Plymouth*
Woodside, John Nelson . . . . . *Cambridge*
Wright, Arthur Clarendon . . . . . *W. Somerville*
Young, Wallace Edward . . . . . *Taunton*

First Year

Acone, Raphael . . . . . *Boston*
Andrews, Benjamin Franklin . . . . . *Worcester*
Atwood, Blanche Louise . . . . . *Whitman*
Bagnall, Elmer Stanley . . . . . *Roslindale*
Barry, John Joseph . . . . . *Lawrence*
Barry, Thomas Matthew . . . . . *Lynn*
Basch, William Eustis Russell . . . . . *Boston*
Baxter, Clarence Pennell . . . . . *Boston*
Bennett, Ernest Floyd . . . . . *Ansonia, Conn.*
Berlin, Maurice George . . . . . *Dorchester*
Berman, Myer . . . . . *Boston*
Blood, Guy Frank . . . . . *Camden, Me.*
Bresnihan, Frank Nesdel . . . . . *Cambridge*
Caines, Richard John Ridgway . . . . . *Boston*
Carpenter, Robert John . . . . . *Winchester*
Chapin, William Andrew Robertson . . . . . *West Springfield*
Christopher, Paul Francis . . . . . *Springfield*
Clow, Henry Leon . . . . . *East Wolfeboro, N. H.*
Coen, Michael . . . . . *Boston*
Cosby, Edwin Gordon . . . . . *Derby Line, Vt.*
Covell, Percival Wentworth . . . . . *Brockton*
Cox, Oscar Francis, Jr. . . . . *Dorchester*
Crowley, Jeremiah Joseph . . . . . *N. Abington*
Curry, William Joseph . . . . . *Charlestown*
Daly, John . . . . . *Lowell*
Davis, Henry Levi . . . . . *East Lynn*
Dickson, Ellsworth Joseph Murray . . . . . *W. Somerville*
Douglas, Samuel Monroe . . . . . *Manchester, N. H*
Driscoll, Robert Ellsworth . . . . . *Cambridge*
DuVally, James Francis . . . . . *Boston*
Elkin, Samuel Nathaniel . . . . . *Boston*
Erlenbach, James Hill . . . . . *Dorchester*
Finkelstein, Isadore Albert . . . . . *Lynn*
Freeman, Benjamin Lawrence . . . . . *Brockton*

Gallant, Alfred Edward, A.B. (St. Ann's) . . *Waltham*
Ghazarian, Garabed Sarkis . . . . . *Boston*
Gillespie, Norman Wilkinson . . . . . *Boston*
Ginn, James Richard . . . . . *W. Somerville*
Haines, George Arthur . . . . . *Chelsea*
Haley, William Thomas . . . . . *Marblehead*
Harrington, Francis Joseph . . . . . *Fall River*
Heap, Richard Dunham . . . . . *Fall River*
Hetherington, John Cameron . . . . . *Waterville, Me.*
Heywood, Nathaniel Jewett . . . . . *Westboro*
Jennings, John Greenwood . . . . . *Jewett City, Conn.*
Johnson, Herbert Lester Charles . . . . . *Brookline*
Jones, Fred Durgin . . . . . *Fall River*
Jones, Thomas Paul . . . . . *Roxbury*
Keating, William Bernard . . . . . *Natick*
Keenan, James Alphonsus . . . . . *Lynn*
Kempton, Whitman Tupper . . . . . *Newton Upper Falls*
Killam, Franklin Harrison . . . . . *West Somerville*
Klein, George . . . . . *Boston*
Laliberte, Elie Joseph . . . . . *Derry, N. H.*
LeClair, Hormidas Zeus . . . . . *Fall River*
Ledoux, Arthur Joseph . . . . . *Fall River*
Levi, Harold . . . . . *Rochester, N. Y.*
Levine, Harry Benjamin . . . . . *Boston*
Levy, Benjamin George . . . . . *Medway*
Logiodice, Leonard Francis . . . . . *Tyler City, Conn.*
MacDonald, Paul Sydney . . . . . *Dorches*
MacGray, Charles Leverne . . . . . *Melbourne, N. S.*
MacIntyre, William Angus . . . . . *West Roxbury*
MacKay, William Henry . . . . . *Waltham*
acLeod, Emily Clark . . . . . *S. Boston*
Macmaster, Anna Elysa . . . . . *Cambridge*
Madden, John James . . . . . *Charlestown*
Mann, David Edwin . . . . . *Norfolk*
Martin, Harold Winthrop . . . . . *Roxbury*
Mason, Daniel Edwin . . . . . *Cooperstown, N. Y.*
McCabe, John Edward . . . . . *North Attleboro*
McCormick, William Aloysius . . . . . *Fall River*
McIntosh, Jennie Grace . . . . . *Winchendon*
McKenna, John Aloysius . . . . . *Boston*
McKiernan, Robert Lewis . . . . . *New Haven, Conn.*
McLaughlin, Arthur Otis . . . . . *Haverhill*
McLean, Ernest Alexander . . . . . *Melrose*

McNeil, William . . . . . *E. Boston*
Meyers, Hyman Bernhard . . . . . *Chelsea*
Millett, Frank Alburtus . . . . . *Swampscott*
Milliken, Walter Lowell . . . . . *Woodsfords, Me.*
Mott, George Ernest . . . . . *Malden*
Nichols, Guy Edward . . . . . *Wilmington*
O'Brien, John Charles . . . . . *Greenfield*
O'Brien, Thomas Joseph . . . . . *Westboro*
O'Reilly, Francis Augustine . . . . . *Lawrence*
Osborn, Stanley Hart . . . . . *Peabody*
Paglia, Jeremiah James . . . . . *Boston*
Partington, Cyrus Brown . . . . . *Fall River*
Potter, Edgar Sayles . . . . . *Chepachet, R. I.*
Pratt, Emily Adelaide . . . . . *Roxbury*
Pugsley, Charles Bernard . . . . . *Jamaica Plain*
Quirk, Richard Charles . . . . . *Bristol, R. I.*
Rabinovitz, Bernard . . . . . *Malden*
Rapoport, Boris David . . . . . *Boston*
Raymond, Albert Orville . . . . . *Brockton*
Robins, Samuel . . . . . *Boston*
Robinson, Blanche Rebecca . . . . . *Lawrence*
Robinson, Horace Eddy . . . . . *Bradford*
Rogers, John Andrews . . . . . *Nashua, N. H.*
Rothschild, Harry . . . . . *New Bedford*
Ryan, Frederick Louis . . . . . *Brockton*
Ryder, Walter Irenaeus . . . . . *S. Boston*
Scanlon, Joseph Michael . . . . . *Lawrence*
Segall, Samuel Kelman . . . . . *Somerville*
Sharood, Howard Cushman . . . . . *Brockton*
Shields, Luke Edward . . . . . *Boston*
Silverman, Louis Screbriany . . . . . *Boston*
Smith, Earl Perry . . . . . *Providence, R. I.*
Smith, Edwin Eugene . . . . . *Waltham*
Smith, George Albert . . . . . *Norwood*
Smith, William Francis . . . . . *Malden*
Spellman, Martin Henry . . . . . *Whitman*
Starr, Lucy Margaret . . . . . *Boston*
Sullivan, Elizabeth Ann . . . . . *Winchendon*
Sullivan, John Francis . . . . . *Fall River*
Sullivan, Robert Thomas . . . . . *South Boston*
Tefft, Peter . . . . . *Boston*
Thornton, Fred Francis . . . . . *Brighton*
Villers, Ernest Albert de . . . . . *Oxford*

Wadden, Joseph Mathew . . . . . *Cambridge*
Walsh, Patrick Henry . . . . . *Fall River*
Whitney, Leroy Danforth . . . . . *Roxbury*
PH.G. (R. I. Coll. Ph.)
Woodward, LeRoy Albert . . . . . *Pawtucket, R. I.*
PH.G. (R. I. Coll. Ph.)

Special Students

Fraim, Irving William . . . . . *Waltham*
Harney, Robert Edwin . . . . . *Dorchester*
Knowles, Edward Augustine . . . . . *Boston*
Mulvanity, John Joseph . . . . . *Nashua, N. H.*

Post-Graduate

Haché, Henry Clement . . . . . *Somerville*
LeBlanc, William, M.D. . . . . *Somerville*

Dental School

[P. O. Address, 416 Huntington Ave., Boston, Mass.]

Third Year

Barton, Peter . . . . . *W. Somerville*
Brown, Guy Edward . . . . . *W. Somerville*
Brown, John Bernard . . . . . *Bayside, P. E. I.*
Brown, Maurice Vivian, A.B. (Bates) . . . . *Norway, Me.*
Bryant, Myron Eldridge . . . . . *Machias, Me.*
Curtis, Harold Francis . . . . . *Quincy*
Denning, William Vincent . . . . . *S. Boston*
Derbyshire, Raymond Ashton . . . . . *Lawrence*
Gammon, Fred Battles . . . . . *Brockton*
Gately, Edward John . . . . . *Marlboro*
Gibbons, John Joseph . . . . . *New Bedford*
Graumann, Ernest Gustave . . . . . *Jamaica Plain*

Griffin, Samuel Frederic . . . . . *Portsmouth, N. H.*
Haines, J. Herman . . . . . *Lynn*
Hartigan, Thomas Joseph . . . . . *Providence, R. I.*
Herlihy, David Joseph . . . . . *Fitchburg*
Hurley, William Patrick . . . . . *S. Boston*
Jackson, Gordon Francis . . . . . *Dorchester*
Jenkins, Clarence Edmund . . . . . *E. Sullivan, N. H.*
Jones, Louis Franklin . . . . . *Somerville*
Kaston, Louis . . . . . *Boston*
Keith, James Harold . . . . . *Bridgewater*
Kelley, John Joseph . . . . . *Worcester*
Kenswil, René . . . . . *Utrecht, Holland*
Knight, Joseph King, Jr., A.B. (Dartmouth) . *Hyde Park*
Leonard, John Henry . . . . . *Brockton*
Lockhart, Arthur Alexander . . . . . *Summerside, P. E. I.*
Logue, Owen Joseph . . . . . *Woburn*
MacSween, Frederick William . . . . . *Summerside, P. E. I.*
McKenna, James Joseph . . . . . *New Bedford*
McNamara, William Francis . . . . . *Clinton*
Nader, George . . . . . *Mahalla, Egypt*
Noonan, George Francis . . . . . *Roxbury*
O'Connor, Edward Michael . . . . . *Winchester*
Pinsky, David . . . . . *Medway*
Roberts, Jacob Frederick . . . . . *Medford*
Rockett, Cecilia Marie . . . . . *Dorchester*
Ryan, James Edward . . . . . *Oakdale*
Ryder, Harry Clifford . . . . . *Boston*
Stack, Thomas Paul . . . . . *Hyde Park*
Tannebring, William Charles . . . . . *Three Rivers*

Second Year

Allen, Frederick Carroll . . . . . *Dedham*
Allen, Henry Roy . . . . . *Lynn*
Anthony, William Wilton . . . . . *Wakefield*
Askin, John Leo . . . . . *Dorchester*
Austin, LeRoy Sharman . . . . . *Swampscott*
Bagley, Patrick Joseph . . . . . *Lowell*
Bohaker, Karl Aubrey . . . . . *Somerville*
Bonney, Albion Paris . . . . . *Quincy*
Branagan, George Henry . . . . . *Natick*
Briggs, Carl Skillings . . . . . *S. Paris, Me.*
Bruce, Frank Bradshaw . . . . . *Shelburne, N. S.*
Burgess, Ralph Arthur . . . . . *Woburn*
Bursten, Bernhardt Bertwell . . . . . *Revere*

Cadorette, Louis Henry . . . . . *Turners Falls*
Carlson, Torsten Axel . . . . . *Dorchester*
Carter, Walter James . . . . . *Pembroke, Me.*
Cassidy, James Owen . . . . . *Dover, N. H.*
Chessman, John Wesley . . . . . *Abington*
Christman, George . . . . . *Cambridge*
Clark, John Locke . . . . . *Valley Falls, R. I.*
Cleaves, Chester Evander . . . . . *Montpelier, Vt.*
Corry, Robert Joseph . . . . . *Woburn*
Cosgrove, Michael Edward . . . . . *Worcester*
Costello, Peter . . . . . *Pawtucket, R. I.*
Crowley, Daniel Joseph . . . . . *Charlestown*
Dailey, James William . . . . . *Cambridge*
Danforth, George Arthur . . . . . *Manchester, N. H.*
Dixon, Mildred Gordon Marjory . . . . . *Worcester*
Donovan, William Dacey . . . . . *Wakefield*
Dunne, Michael Joseph . . . . . *Rockland*
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Walker, Forrest Stanley . . . . . *Saco, Me.*
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Weston, Howard Nelson . . . . . *Skowhegan, Me.*
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Willey, Leon Bartlett . . . . . *Middletown, Conn.*
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Yates, Thomas Henry . . . . . *Taunton*

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Bruce, Barnett . . . . . *Brookline*
Burke, Eugene Edward . . . . . *Brockton*
Burnham, John Fletcher . . . . . *Gloucester*
Butterfield, Ross Hunt . . . . . *N. Troy, Vt.*
Derby, Frank Amos . . . . . *Keene, N. H.*
Devlin, James Edward . . . . . *Brighton*
Dyon, Oscar Omer . . . . . *Boston*
Faulkner, Ralph Lindsay . . . . . *N. Grafton*
Flood, Charles Augustine . . . . . *Lynn*
Hamilton, Arthur Stuart . . . . . *Needham*
Henderson, Robert King . . . . . *Cordaville*
Kline, Louis Frederick . . . . . *Lawrence*
Martel, Chester Henry . . . . . *Lowell*
McDonnell, Michael Joseph . . . . . *Holyoke*
McGourty, Garrett Thomas . . . . . *Malden*
McVey, Francis Frederick . . . . . *S. Boston*
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Shay, Norbert Branley . . . . . *S. Braintree*
Small, Wilbert Merrill . . . . . *Milbridge, Me.*

SUMMARY

Trustees		28

CORPS OF INSTRUCTION

Emeritus	4	
President and Professors	55	
Associate Professor	1	
Assistant Professors	19	
Lecturers	3	
Instructors	99	
Demonstrators	3	
Assistant Demonstrators	10	
Assistants	42	
Laboratory Assistants	22	
Total engaged in work of instruction	—	258
Other Officers, not previously counted		26

STUDENTS

GRADUATE SCHOOL		8
SCHOOL OF LIBERAL ARTS:		
Senior	17	
Junior	20	
Sophomore	18	
Freshman	60	
Special	3	—118
ENGINEERING SCHOOL:		
Senior	45	
Junior	40	
Sophomore	55	
Freshman	91	—231
CRANE THEOLOGICAL SCHOOL		10
JACKSON COLLEGE:		
Senior	11	
Junior	17	
Sophomore	20	
Freshmen	34	
Special	2	—84
MEDICAL SCHOOL:		
Fourth Year	74	
Third Year	52	
Second Year	129	
First Year	124	
Special	4	
Post-Graduate	2	—385
DENTAL SCHOOL:		
Third Year	41	
Second Year	107	
First Year	134	
Special	22	—304
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Total registration of students		1147
Names appearing twice		5
Total number of students		1142

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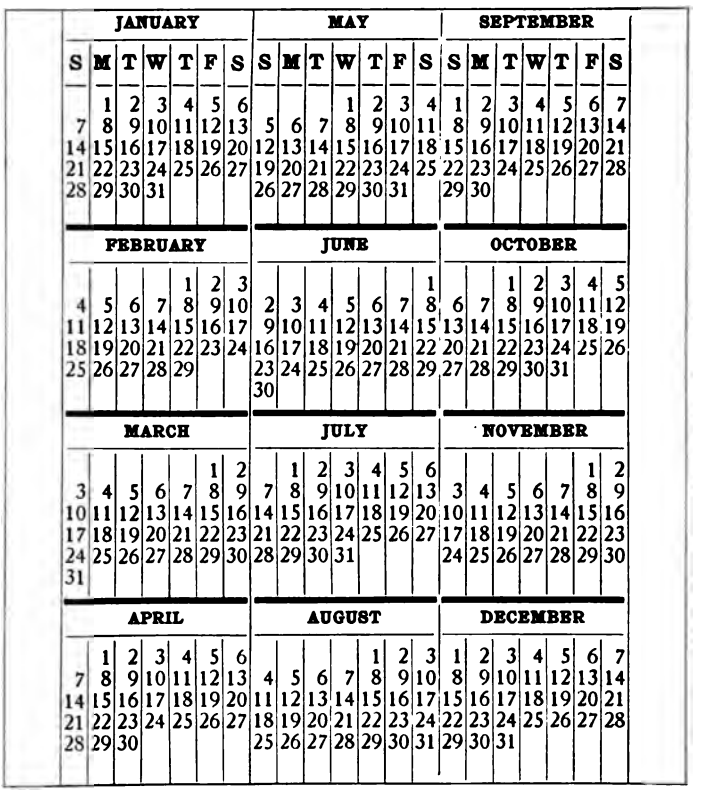

JANUARY

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Tufts College, about four miles from Boston, is accessible by rail and by electric cars. The railway station, "Tufts College," is on the Southern Division of the Boston and Maine Railroad; but goods sent by freight go to North Somerville, Mass., and should be so addressed. The post-office address is "Tufts College, Mass."

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Calendar

1911

DEC. 20. Christmas recess begins, in the Department of Arts and Sciences, Wednesday, 1 P.M.

DEC. 22. Christmas recess begins, Medical and Dental Schools, 1 P.M.

1912

JAN. 1. Christmas recess ends in the Department of Arts and Sciences Monday, 2 P.M.; in the Medical and Dental Schools 9 A.M.

FEB. 2, 3, 5, 6, 7. Mid-year examinations

FEB. 7. End of the first half-year in the Department of Arts and Sciences, Wednesday

FEB. 12. Second half-year begins in the Department of Arts and Sciences, Monday. Registration

FEB. 22. Washington's Birthday, Wednesday. College exercises are suspended

MAR. 31 to APR. 7. Spring recess in the Medical and Dental Schools

APR. 17. Spring recess begins in the Department of Arts and Sciences, Wednesday evening

APR. 24. Spring recess ends, Wednesday evening

MAY 10. Goddard Prize Reading, Friday, 8 P.M.

MAY 15. Senior Theses in Engineering School must be filed at the office of the Dean before 5 P.M.

MAY 25 to 29. Senior examinations in Engineering School

MAY 30. Memorial Day, Thursday. College exercises are suspended

JUNE 8, 10, 11, 12, 13. Final examinations in the Department of Arts and Sciences

JUNE 14. Class Day, Friday

JUNE 16. Baccalaureate Sermon, Sunday, 4 P.M.

JUNE 19. Fifty-sixth Annual Commencement, Wednesday

JUNE 17–22. Entrance examinations conducted by the College Entrance Examination Board. Application blanks may be obtained from the Secretary of the Board, P. O. Sub-Station 84, New York, N. Y.

Summer Vacation, Thirteen Weeks

Fall Examinations for Admission to the Department of Arts and Sciences, the Medical School, and the Dental School

SEPT. 14. Elementary, Intermediate, and Advanced French, 9 to 11 A.M.; Elementary, Intermediate, and Advanced German, 11 A.M. to 1 P.M.; Elementary and Advanced Greek, Advanced Algebra and Trigonometry, 2 to 5 P.M.

SEPT. 16. Algebra, 9 to 10.30 A.M.; English, 10.30 A.M .to 12.30 P.M.; Plane Geometry, 2 to 4 P.M.; Physics, 4 to 5 P.M.; Drawing, 4 to 6 P.M.

SEPT. 17. Elementary, Intermediate, and Advanced Latin, 9 to 12 A.M.; Solid Geometry, 9 to 11 A.M.; Natural History, Geology, and Economics, 11 A.M. to 1 P.M.; History, 2 to 4 P.M.; Chemistry, 4 to 5 P.M.

SEPT. 9. Fall examinations for the removal of conditions, in the Medical and Dental Schools, begin, 10 A.M.

SEPT. 19. College year begins, Thursday morning
Registration of all students in the Department of Arts and Sciences

SEPT. 23. Dental Infirmary opens, 9 A.M.

SEPT. 25. Lectures begin in Medical and Dental Schools, Wednesday, 3 P.M.

OCT. 5. Registration closes in Medical and Dental Schools, 6 P.M.

OCT. 12. Saturday, Columbus Day. (By agreement of the students, not observed in the Department of Arts and Sciences, one day being added, instead, to the Thanksgiving recess)

NOV. 20. Announcement of Academic Honors, 12 M., Wednesday

NOV. 20. Russell Lecture, Wednesday, 8 P.M.

NOV. 27. Thanksgiving recess begins in all Departments, Wednesday, 1 P.M.

DEC. 1. Thanksgiving recess ends in Medical and Dental Schools Sunday evening

DEC. 2. Thanksgiving recess ends in Department of Arts and Sciences, Monday evening

DEC. 18. Christmas recess begins, in the Department of Arts and Sciences, Wednesday, 1 P.M.

DEC. 20. Christmas recess begins, Medical and Dental Schools, 1 P.M.

DEC. 30. Christmas recess ends in the Department of Arts and Sciences Monday, 2 P.M.; in the Medical and Dental Schools, 9 A.M.

1913

JAN. 31, FEB. 3, 4, 5. Mid-year examinations in the Department of Arts and Sciences

FEB. 5. End of the first half-year in the Department of Arts and Sciences, Wednesday

FEB. 10. Second half-year in the Department of Arts and Sciences begins, Monday. Registration

Historical Sketch

Tufts College was established under a charter granted on the twenty-first day of April, 1852, by the General Court of Massachusetts. Under this charter, as later amended, the College is empowered "to confer such degrees as are usually conferred by colleges in New England." Its organization now comprises the School of Liberal Arts, the Engineering School, the Graduate School, the Crane Theological School, the Medical School, the Dental School, and Jackson College for Women. The School of Liberal Arts prepares for the degrees of Bachelor of Arts and Bachelor of Science. Work in the Engineering School leads to the degree of Bachelor of Science in Engineering. The Graduate School offers the degrees of Master of Arts and Master of Science. The course in the Theological School leads to the degree of Bachelor of Sacred Theology, that in the Medical School to the degree of Doctor of Medicine, and that in the Dental School to the degree of Doctor of Dental Medicine.

The Foundation.—The movement resulting in the founding of the College was set on foot in 1847, through the efforts of the Rev. Thomas J. Sawyer, of New York, the Rev. Hosea Ballou, 2d, of Medford, and the Rev. Thomas Whittemore, of Cambridgeport. After much consideration, the work of raising a fund of one hundred thousand dollars for a foundation was undertaken, under the direction of the Rev. Otis A. Skinner, of Boston. About sixty thousand dollars was obtained in money. Sylvanus Packard gave his bond for twenty thousand dollars additional, and Charles Tufts gave twenty acres of land on Walnut Hill, embracing the present site of the College. Mr. Tufts announced his intention of increasing his gift of land to more than one hundred acres, and thus became the largest benefactor of the young institution, which accordingly received his name. Mr. Packard was a Boston merchant, who from the beginning made the College a peculiar care, and bequeathed to it his entire fortune. Among other benefactors who may be numbered among the founders of the College were Oliver Dean,

who gave it ninety thousand dollars, and Thomas A. Goddard, whose gifts, though unobtrusive, were constant. Mrs. Goddard continued the generosity of her husband, and at her death made a substantial bequest to the College. Dr. William J. Walker also made gifts and bequests amounting to nearly three hundred thousand dollars.

While the College owed its beginning to the effort and the support of members of the Universalist denomination, it was provided by the Legislature in the charter that

"No instructor in said college shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said college, on account of the religious opinions he may entertain."

This provision has always been interpreted by the Trustees and Faculty in its broadest sense. The non-sectarian character of the work of the College is amply shown by the membership of its Faculty and student body. The truth, and not the maintenance of any religious or political doctrine, has been the aim of its research and its instruction.

The Department of Arts and Sciences.— The first Faculty meeting was held October 9, 1854, when there were in College students forming the Sophomore and the Freshman class. The only building at that time was the main College Building, now known as Ballou Hall. The next building to be erected was a small brick dormitory, now Packard Hall. The large dormitory known as East Hall was the next addition to the group, and in 1872 West Hall was opened to students. It was ten years before building operations were renewed by the College. The original Faculty numbered five. The first class, of three members, was graduated in 1857.

At the outset, provision was made for a course of study leading to the degree of Bachelor of Arts. The only feature of its work peculiar to Tufts College in these years of its beginning was the attention given to the study of history. The first President of the College, the Rev. Hosea Ballou, 2d, D.D., was likewise Professor of History and of Intellectual Philosophy, and

gave instruction in history remarkable alike for its quantity and quality, at a time when the study was hardly recognized in American colleges.

Dr. Ballou was succeeded in the presidency by the Rev. Alonzo Ames Miner, D.D., LL.D., who was inaugurated in 1862, and continued in office until 1875, resigning in February of that year. Dr. Miner's incumbency was marked by large financial additions to the College, and by the further growth of a broad and scholarly spirit.

In March, 1875, the Rev. Elmer Hewitt Capen, D.D., was elected to the presidency of the College, vacated by the resignation of President Miner, and he was inaugurated on the second day of June. Dr. Capen's administration, which was characterized by the expansion of the College to university proportions, and was marked by the material and intellectual advance of all departments, was terminated by his death, March 22, 1905.

Rev. F. W. Hamilton, D.D., LL.D., was appointed acting president in 1905, and was inaugurated as president, June 19, 1906.

The Engineering courses were begun in 1869 with a department of Civil Engineering. The great development of electrical science was promptly recognized, and a department of Electrical Engineering was opened to students in 1882, a professorship in the subject being established in 1890. This side of the college work had rapid development: in 1894 the field, was broadened by the addition of a course in Mechanical Engineering, and in 1898 by one in Chemical Engineering. In these courses effort has always been made to give thorough practical training. The will of the late Henry B. Pearson, founding the Bromfield-Pearson School, and putting it into the hands of the Trustees of Tufts College to administer, provided a thoroughly-equipped building for technical instruction, of great value in drawing, pattern-making, and in machine and forge work. The Bromfield-Pearson building was completed in the fall of 1894. Robinson Hall, completed in 1900, gives to the technical courses a modern building with every facility for

their work. It was given in memory of the late Charles Robinson, LL. D., sometime President of the Trustees, by his heirs.

In 1881 the late Phineas T. Barnum gave fifty-five thousand dollars for the establishment of the Barnum Museum of Natural History, and by his last will he bequeathed forty thousand dollars more. The main Museum building was completed in 1884. The west wing, containing the new biological laboratories, was erected in 1894. The years 1882 and 1883 saw the completion of Goddard Chapel, given by Mrs. Mary T. Goddard as a memorial of her husband, the first treasurer of the College. Goddard Gymnasium, a gift from the same source, was also completed in 1883. The gymnasium has been enlarged and transformed into what is practically a new building. Dean Hall was erected in 1887 from funds bequeathed by the late Oliver Dean. In the college year 1894–95 two new buildings were opened, in addition to the west wing of the Barnum Museum. These were the Chemical building and Curtis Hall, containing students' rooms, class rooms, and the post-office.

The gift of one hundred thousand dollars from Mrs. Andrew Carnegie secured the erection of an adequate library building, called the Eaton Memorial Library, which was begun in 1905, and put into active service in 1908.

The development of the College in its internal life has been the notable fact of recent years. In 1866 the degree of Bachelor of Philosophy was offered to students who should pursue a prescribed course of two years, the object being to provide for those who had been prepared only in English subjects. This course was maintained until 1875, when it was changed to a course of four years. The requirements for admission were then made the same as for the regular course, except that Greek as a condition of entrance was omitted, and an amount of work in French or German, considerably less than its equivalent, was substituted. The degree of Bachelor of Philosophy has more and more fallen into disuse, in favor of Bachelor of Arts. In 1891 a new course of study, leading to the degree of Bachelor

of Arts, was offered, with an entrance requirement believed to be fully the equivalent of the Greek, in two modern languages. This was one important step taken by the College toward the broadening of its opportunities, but it soon proved to be insufficient. There had been a steady growth for many years in the amount of work done, and in the number of departments of learning represented. Two new departments had been instituted in 1892, in response to the tendencies of educational development,—those of Biology and History. Departments of Music and Philosophy have since been added, the work in Political Science has been broadened, and provision made for the study of Public Law. In the fall of 1893 it seemed possible to take another step and to put into operation the present plan of work, which is believed to be an approach to a rational co-ordination and connection of the college and university systems. The principle which governed this adjustment of the College curriculum has been applied to the entrance requirements.

There were opened in 1895 courses of four years each in Biology, Chemistry, General Science, and Medical Preparatory work, leading to the degree of Bachelor of Science, and accessible to graduates of all good high schools. The course in Biology was withdrawn in 1905. Bachelors of Science may, if they desire, go on to the attainment of the degree of Bachelor of Arts.

In response to a pressing demand the College was, in the summer of 1892, opened to women on the same terms as to men. After seventeen years of trial, it appeared to both Trustees and Faculty that the interests of the sexes could be better served by separate instruction. The necessary amendments to the Charter were procured and, in the fall of 1910, Jackson College for Women was opened as an affiliated institution. Jackson College is under the direction of the Trustees and President of Tufts College. It has a Dean who is a woman. Otherwise its Faculty is identical with that of Tufts. This arrangement assures to the students in Jackson every educational facility offered by Tufts

under conditions more favorable than were formerly possible. In the fall of 1894 there was provided for the accommodation of women students, Metcalf Hall, the gift of Albert Metcalf, of Newton. Start House and Richardson House also offer home-like rooms for women students.

The Professional Schools.—The will of Mr. Packard required that a professor of Christian Theology should be maintained from the income of funds bequeathed by him. The Rev. Thomas J. Sawyer, D.D., was elected Packard Professor in 1869. This was the beginning of the Theological School. In 1882 the school had developed so that its Faculty received a definite organization, and Dr. Sawyer became the first Dean, retaining the office until his retirement as Packard Professor Emeritus in 1892. He was succeeded by Rev. Dr. Charles H. Leonard who retired in 1910. From the erection of West Hall until the completion of the separate buildings of the school, the western side of West Hall was occupied by the Divinity School. In 1892, by the gift of ex-President Miner, the school was provided with Miner Hall, containing the library, class rooms, chapel, and reception room; and at the same time, largely through the efforts of the Dean, the money was obtained to build Paige Hall, a dormitory for students of the Theological School.

In 1903 a five-year course was offered to students of divinity, combining subjects required for a proper professional equipment with studies that look toward liberal culture. This course is now arranged to cover six years. At its successful completion the degrees A.B. and B.D. are both awarded. There is also a four-year course, leading to B. D.

In 1906 the name of the Divinity School was changed to the Crane Theological School, in recognition of a gift of one hundred thousand dollars from the estate of the late Thomas Crane of New York, whose son, Albert Crane, '63, thus carried out the expressed purpose of his father.

In 1893 Tufts College met what seemed to be a need of the community by opening the Tufts Medical School. The growth

of the school in efficiency and numbers justified its institution. The course is four years in length. Women are admitted upon the same terms as men.

The Medical School found its complement in the Tufts Dental School, organized in 1899 by the absorption of the Boston Dental College, which was incorporated in 1868, and has a numerous body of alumni. The equipment, funds, and good will of this school passed to Tufts College.

Administration.—The control of the College is vested by the charter in a self-perpetuating body of Trustees, not to exceed thirty in number. As the College has matured the number of its alumni upon the Board of Trustees has steadily increased. To give the Alumni as a whole a direct represenation in the administration, a Board of Overseers was instituted, which continued from 1899 till 1907. At this time an amendment to the college charter was passed by the Massachusetts legislature, permitting the election of a certain proportion of Trustees from and by the alumni themselves.

THE COLLEGE CHARTER

SECTION 1. B. B. Mussey, Timothy Cotting, Richard Frothingham, Jr., their associates and successors, are hereby constituted a body corporate by the name of the Trustees of Tufts College, in Medford, and they and their successors, and such as shall be duly elected members of said corporation, shall be and remain a body corporate by that name forever. And for the orderly conducting of the business of said corporation, the said Trustees shall have power and authority, from time to time, as occasion may require, to elect a President, Vice-President, Secretary and Treasurer, and such other officers of said corporation as may be found necessary, and to declare the duties and tenures of their respective offices; and also to remove any Trustee from the same corporation, when in their judgment he shall be rendered incapable, by age or otherwise, of discharging the duties of his office, or shall neglect or refuse to perform the same; and also, from time to time, to elect new members of the said corporation; provided, nevertheless, that the number of members shall never be greater than thirty.

SEC. 2. The said corporation shall have full power and authority to determine at what times and places their meetings shall be holden, and the manner of notifying the Trustees to convene at such meetings, and also, from time to time, to elect a President of said College, and such professors

under conditions more favorable than were formerly possible. In the fall of 1894 there was provided for the accommodation of women students, Metcalf Hall, the gift of Albert Metcalf, of Newton. Start House and Richardson House also offer home-like rooms for women students.

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SEC. 2. The said corporation shall have full power and authority to determine at what times and places their meetings shall be holden, and the manner of notifying the Trustees to convene at such meetings, and also, from time to time, to elect a President of said College, and such professors

tutors, instructors, and other officers of the said College as they shall judge most for the interest thereof, and to determine the duties, salaries, emoluments, responsibilities, and tenures of their several offices. And the said corporation are further empowered to purchase or erect, and keep in repair, such houses and other buildings as they shall judge necessary for the said College; and also to make and ordain, as occasion may require, reasonable rules, orders, and by-laws, not repugnant to the Constitution and Laws of this Commonwealth, with reasonable penalties, for the good government of the said College, and for the regulation of their own body; and also to determine and regulate the course of instruction in said College, and to confer such degrees as are usually conferred by colleges in New England; provided, nevertheless, that no corporate business shall be transacted at any meeting unless one-third, at least, of the Trustees are present.

SEC. 3. The said corporation may have a common seal, which they may alter or renew at their pleasure, and all deeds sealed with the seal of said corporation, and signed by their order, shall, when made in their corporate name, be considered in law as the deeds of said corporation; and said corporation may sue and be sued in all actions, real, personal, or mixed; and may prosecute the same to final judgment and execution by the name of the Trustees of Tufts College; and said corporation shall be capable of taking and holding in fee simple, or any less estate, by gift, grant, bequest, devise, or otherwise, any lands, tenements, or other estate, real or personal, provided, that the clear annual income of the same shall not exceed two hundred thousand dollars.*

SEC. 4. The clear rents and profits of all the estate, real and personal, of which the said corporation shall be seized and possessed, shall be appropriated to the endowment of said College in such manner as shall most effectually promote virtue and piety, and learning in such of the languages, and of the liberal and useful arts and sciences, as shall be recommended from time to time by the said corporation, they conforming to the will of any donor or donors in the application of any estate which may be given, devised, or bequeathed, for any particular object connected with the College.

SEC. 5. No instructor in said College shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges honors, or degrees of said College on account of the religious opinions he may entertain.

SEC. 6. The Legislature of this Commonwealth may grant any further powers to, or alter, limit, annul, or restrain any of the powers vested by this act in the said corporation, as shall be found necessary to promote

* The limitation as to income has been removed by statute.

the best interests of the said College, and more especially may appoint and establish overseers or visitors of the said College, with all necessary powers for the better aid, preservation, and government thereof.

SEC. 7. The granting of this Charter shall never be considered as any pledge on the part of the Government that pecuniary aid shall hereafter be granted to the College.

CHAPTER 632 OF THE ACTS OF 1910

AN ACT

TO AUTHORIZE THE TRUSTEES OF TUFTS COLLEGE TO MAINTAIN A SEPARATE COLLEGE FOR WOMEN

BE it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. The corporation known as the "Trustees of Tufts College" may establish and maintain for the education of women exclusively a college to be known as the "Jackson College for Women," and may appropriate and set apart for the maintenance thereof any funds now held by it designated by the donors to be for the education of women, and all property, real and personal, hereafter received by gift, grant, devise or bequest for that purpose.

SECTION 2. All the provisions contained in the act establishing the Trustees of Tufts College, and in the acts in amendment thereof, shall relate to the Jackson College for Women, so far as applicable thereto, except as provided in this act.

SECTION 3. The corporation may, in the name of Jackson College for Women, confer any of the degrees which it by law is authorized to confer: provided, however, that degrees so conferred in course shall be conferred exclusively upon women. It may also adopt and use upon diplomas and other written instruments issued in the Jackson College for Women, a seal of a design differing from the common seal of the corporation.

SECTION 4. Section two of chapter two hundred and fifty-five of the acts of the year nineteen hundred and seven is hereby amended so as to read: Section 2. All persons who for five years have held a degree from Tufts College or from Jackson College for Women, conferred in regular course, and all persons who have received from said colleges an honorary degree, shall be entitled to vote for said ten members. And any person who for ten years has held from said colleges a degree conferred in regular course shall be eligible to be elected a member of said corporation: provided, always, that at least seven of the ten members so elected by the Alumni shall hold from Tufts College the first degree in arts or sciences.

SECTION 5. This act shall take effect upon its passage.

THE ADMINISTRATION OF THE COLLEGE

The Trustees

President

HOSEA WASHINGTON PARKER

Vice-President

AUSTIN BARCLAY FLETCHER

Treasurer

ARTHUR ELLERY MASON, 24 Milk St., Boston

Assistant-Treasurer

EDMUND WILBUR KELLOGG

Secretary

EDMUND WILBUR KELLOGG, 24 Milk St., Boston

Executive Committee

CHARLES NEAL BARNEY, *Chairman*
SUMNER ROBINSON ROSEWELL BIGELOW LAWRENCE
FREDERICK WILLIAM HAMILTON
ROBERT ROBBINS ANDREWS ARTHUR WINSLOW PEIRCE
THOMAS CUNNINGHAM LLOYD EVERETT WHITE
IRA RICH KENT

Committee on Finance

WALTER EDWARD PARKER, *Chairman*
WILLIAM WALDEMAR SPAULDING JAMES ARTHUR JACOBS
J. FRANK WELLINGTON JOHN E. COUSENS

Trustees*

JOHN COLEMAN ADAMS, A.M., D.D. . . . . Hartford, Conn.
BYRON GROCE, A.M., LITT.D. . . . . Boston
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Russell Lecturer, 1912

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DEPARTMENT OF ARTS AND SCIENCES

Requirements for Admission

and

General Information

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* The Faculty of Arts and Sciences consists of the Faculties of the School of Liberal Arts, the Engineering School, the Graduate School, and the Crane Theological School, constituting one body for the discharge of certain administrative functions.

Requirements for Admission

Candidates for admission to the Department of Arts and Sciences must have received adequate preparation in certain subjects falling in two groups, known respectively as the Primary and the Secondary Group. A unit represents a year's study in any subject in a secondary school, representing approximately a quarter of a full year's work.

The Primary Group

English A, 2
English B, 1
*An Elementary Foreign Language, ancient or modern, 2;
Elementary History, 1;
Elementary Algebra, 1½;
Plane Geometry, 1.

Candidates for admission must present all the subjects of the Primary Group, and a certain part of the subjects of the Secondary Group, depending upon the degree in view. No subject offered in the Primary Group can be counted in the Secondary Group.

The Secondary Group

ELEMENTARY

Greek, 2
Latin, 2
French, 2
German, 2
Chemistry, 1
Physics, 1
Botany, 1
Zoology, 1
Geology and Geography, 1
Mechanical Drawing, 1
Freehand Drawing, ½
Shop Work, ½ to 2
Economics, ½
Musical Appreciation, ½
Music (Harmony), ½

INTERMEDIATE*

Latin, 1
French, 1
German, 1

*Candidates for the degree of Bachelor of Science in General Science, in Chemistry, or in the Medical Preparatory Course, should present Elementary German.
Engineering students will find it an advantage to present both French and German.

ADVANCED*

Greek, 1	Algebra, ½
Latin, 1	Trigonometry, ½
French, 1	Solid Geometry, ½
German, 1	Counterpoint, ½
History, 1	Pianoforte, Voice, or Violin, ½

Candidates for the degree of Bachelor of Arts or Bachelor of Divinity must submit, in addition to the five subjects of the Primary Group, a selection of subjects from the Secondary Group aggregating 6½ units, according to the valuation indicated above. Candidates for the degree of Bachelor of Science in the School of Liberal Arts must submit from the Secondary Group subjects aggregating 6½ units, and candidates for the same degree in the Engineering School, subjects aggregating 5½ units.

The following conditions are to be observed:

1. The 6½ units for the course leading to A.B. or for that leading to B.D., must include those representing one advanced ancient language.

2. The 5½ units for any course in engineering must include ½ unit in solid geometry.

Detailed information concerning the amount and character of the work demanded in preparation will be found on the following pages.

Detailed Statement of Requirements

Elementary English. *Three units.*

Preparation in English has two main objects: (1) command of correct and clear English, spoken and written; (2) ability to read with accuracy, intelligence, and appreciation.

The first object requires instruction in grammar and composition. English grammar should ordinarily be reviewed in the secondary school; and correct spelling and grammatical accuracy should be rigorously exacted in connection with all written work during the four years. The principles of English composition governing punctuation, the use of words, paragraphs, and

*The credit for advanced subjects, as here given, is in addition to the credit for the corresponding elementary subjects.

the different kinds of whole composition, including letter-writing, should be thoroughly mastered; and practice in composition, oral as well as written, should extend throughout the secondary school period. Written exercises may well comprise narration, description, and easy exposition and argument based upon simple outlines. It is advisable that subjects for this work be taken from the student's personal experience, general knowledge, and studies other than English, as well as from the reading in literature. Finally, special instruction in language and composition should be accompanied by concerted effort of teachers in all branches to cultivate in the student the habit of using good English in recitations and in various exercises, whether oral or written.

The second object is sought by means of two lists of books, headed respectively *reading* and *study*, from which may be framed a progressive course in literature covering four years. In connection with both lists, the student should be trained in reading aloud and be encouraged to commit to memory some of the more notable passages, both in verse and in prose. As an aid to literary appreciation, he is further advised to acquaint himself with the most important facts in the lives of the authors whose works he reads, and with their place in literary history.

READING (A) *Two Units.*

The aim of this course is to foster in the student the habit of intelligent reading, and to develop a taste for good literature, by giving a first-hand knowledge of some of its best specimens. He should read the books carefully, but his attention should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads.

*For Students Entering in 1912**

Shakespeare's As You Like It and Julius Cæsar; Franklin's Autobiography; Goldsmith's The Deserted Village; Dickens' A

* The books for the classes entering in 1912 are selected from the list adopted by the Conference on Uniform Entrance Requirements in English, at meetings held in Newark, N. J., February 22, 1905, February 22, 1908, and February 22, 1909. Candidates may make other selections from that list, provided they give notice of their intention to present these books on or before the first day of February preceding the examination.

Tale of Two Cities; George Eliot's Silas Marner; Irving's Sketch Book; Scott's The Lady of the Lake; Byron's Mazeppa and The Prisoner of Chillon; Macaulay's Lays of Ancient Rome.

For Students Entering in 1913, 1914, and 1915

With a view to large freedom of choice, the books provided for reading are arranged in the following groups, from which at least ten units are to be selected, two from each group. Each unit is set off by semicolons.

I. The Old Testament, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; the Odyssey, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; the Iliad, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI; Virgil's Æneid. The Odyssey, Iliad, and Æneid should be read in English translations of recognized literary excellence.

For any unit of this group a unit from any other group may be substituted.

II. Shakespeare's Merchant of Venice; Midsummer Night's Dream; As You Like It; Twelfth Night; Henry the Fifth; Julius Cæsar.

III. Defoe's Robinson Crusoe, Part I; Goldsmith's Vicar of Wakefield; either Scott's Ivanhoe, or Scott's Quentin Durward; Hawthorne's House of the Seven Gables; either Dickens' David Copperfield, or Dickens' Tale of Two Cities; Thackeray's Henry Esmond; Mrs. Gaskell's Cranford; George Eliot's Silas Marner; Stevenson's Treasure Island.

IV. Bunyan's Pilgrim's Progress, Part I; The Sir Roger de Coverley Papers in the Spectator; Franklin's Autobiography (condensed); Irving's Sketch Book; Macaulay's Essays on Lord Clive and Warren Hastings; Thackeray's English Humourists; Selections from Lincoln, including at least the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the Last Public Address, and Letter to Horace Greeley, along with a brief memoir or estimate; Parkman's Oregon Trail; either

Thoreau's Walden, or Huxley's Autobiography and selections from Lay Sermons, including the addresses on Improving Natural Knowledge, A Liberal Education, and A Piece of Chalk; Stevenson's Inland Voyage and Travels with a Donkey.

V. Palgrave's Golden Treasury (First Series), Books II and III, with especial attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's Elegy in a Country Churchyard, and Goldsmith's Deserted Village; Coleridge's Ancient Mariner, and Lowell's Vision of Sir Launfal; Scott's Lady of the Lake; Byron's Childe Harold, Canto IV, and Prisoner of Chillon; Palgrave's Golden Treasury (First Series), Book IV, with especial attention to Wordsworth, Keats, and Shelley; Poe's Raven, Longfellow's Courtship of Miles Standish, and Whittier's Snow Bound; Macaulay's Lays of Ancient Rome, and Arnold's Sohrab and Rustum; Tennyson's Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur; Browning's Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa — Down in the City.

STUDY (B*) *One Unit.*

This part of the requirement is intended as a natural and logical continuation of the student's earlier reading, with greater stress laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions. For this close reading, a play, a group of poems, an oration, and an essay, are provided, as follows:

For Students Entering in 1912

Shakespeare's Macbeth; Milton's Comus, L'Allegro, and Il Penseroso, or Tennyson's Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur; either Burke's Speech on

* The important changes that go into effect with 1913 consist of a greater emphasis upon formal grammar, rhetorical structure and, in the books under Group B, the study of details. Meanwhile, schools desiring to be acquainted with the precise requirements for 1912 are advised to send for the catalogue of Tufts College for 1908-09. The older form of statement is omitted from this catalogue to save space. But a student adequately prepared according to the requirements here printed will have no difficulty in meeting the earlier requirements.

Conciliation with America, or both Washington's Farewell Address and Webster's First Bunker Hill Oration; either Macaulay's Life of Johnson, or Carlyle's Essay on Burns.

For Students Entering in 1913, 1914, 1915

Shakespeare's Macbeth; Milton's L'Allegro, Il Penseroso, and Comus; either Burke's Speech on Conciliation with America, or both Washington's Farewell Address and Webster's First Bunker Hill Oration; either Macaulay's Life of Johnson, or Carlyle's Essay on Burns.

Examination.

However accurate in subject-matter, no paper will be considered satisfactory if seriously defective in punctuation, spelling, or other essentials of good usage.

The examination will be divided into two parts, one of which may be taken as a preliminary, and the other as a final.

The first part of the examination will be upon ten units chosen, in accordance with the plan described above, from the lists headed *reading;* and it may include also questions upon grammar and the simpler principles of rhetoric, and a short composition upon some topic drawn from the student's general knowledge or experience. On the books prescribed for reading, the form of the examination will usually be the writing of short paragraphs on several topics which the candidate may choose out of a considerable number. These topics will involve such knowledge and appreciation of plot, character-development, and other qualities of style and treatment as may be fairly expected of high school students. In grammar and rhetoric, the candidate may be asked specific questions upon the practical essentials of these studies, such as the relation of the various parts of a sentence to one another, the construction of individual words in a sentence of reasonable difficulty, and those good usages of modern English which one should know in distinction from current errors.

The second part of the examination will include composition and those books comprised in the list headed *study*. The test

in composition will consist of one or more essays, developing a theme through several paragraphs, the subjects to be drawn from the books prescribed for *study*, from the candidate's other studies, and from personal knowledge and experiences quite apart from reading. For this purpose the examiner will provide several subjects, perhaps five or six, from which the candidate may select. The test on the books prescribed for study will consist of questions upon their content, form, and structure, and upon the meaning of such words, phrases, and allusions as may be necessary to an understanding of the works and an appreciation of their salient qualities of style. General questions may also be asked concerning the lives of the authors, their other works, and the periods of literary history to which they belong.

In place of the examinations in Elementary English a candidate may offer the examinations of the College Entrance Examination Board in English *a* and *b*.

Elementary German. *Two units.*

It is expected that the candidate will have studied the subject in a systematic course for two school years, each covering the equivalent of 120 sixty-minute periods, during which special attention will have been given to pronunciation and to writing from dictation, as well as to the use of clear and idiomatic English in translation.

The examination will consist of two parts: —

(*a*) The translation into German of easy English sentences, to test the candidate's knowledge of the following subjects: the declension of nouns, adjectives, and pronouns; the conjugation of weak and the more frequently recurring strong verbs; the prepositions and cases which they govern; the simpler uses of modal auxiliaries; the elementary rules of syntax and word order. Proficiency may also be tested by questions on these topics.

(*b*) The translation at sight of easy German prose. It is believed that the requisite facility may be acquired by the reading of from two to three hundred pages of easy German, with preference given to narrative style.

[The following list is made up from works suitable for reading in preparation for this examination; Anderson's Bilderbuch ohne Bilder; Arnold's Fritz auf Ferien; Baumbach's Schwiegersohn: Heyse's Hochzeit auf Capri; Storm's Immensee; Leander's Träumereien; Roth's Ein nordischer Held; Benedix, Der Prozess; Wilhelmi's Einer muss heiraten; Fulda's Das verlorene Paradies.]

In place of the examination in Elementary German a candidate may offer the examination of the College Entrance Examination Board in German *a*.

Intermediate German. *One unit.*

It is expected that the candidate will have pursued, in addition to the work done in preparation for Elementary German, an additional year's work of 120 hours. He should thus have acquired the ability to translate with considerable facility ordinary prose, similar to that of the preparatory course, and to answer briefly in German questions asked in that language by the instructor. Oral practice and dictation should be continued in this third year and a somewhat thorough acquaintance obtained with the rules of syntax, particularly with the subjunctive and infinitive moods; attention should also be given to the simpler facts of word formation — roots, prefixes and suffixes.

The examination will consist of two parts: —

(*a*) The translation into German of a connected passage of simple English, paraphrased from some German text.

(*b*) The translation at sight of passages of ordinary German prose. It is believed that the requisite facility may be acquired by reading in addition to the amount stated for Elementary German, about four hundred pages of narrative and dramatic prose and verse.

[The following list is made up from works suitable for reading in preparation for this examination: Ebner-Eschenbach's Freiherren von Gemperlein; Gerstäcker's Irrfahrten; Hoffmann's Historische Erzählungen; Meyer's Gustav Adolfs Page; Riehl's Burg Neideck und Fluch der Schönheit; Freitag's Aus dem Staat Friedrichs des Grossen, die Journalisten; Schiller's Geisterseher, Neffe als Onkel, and Balladen; Scheffel's Trompeter von Säkkingen.]

In place of the examination in Intermediate German a candi-

date may offer the examination of the College Entrance Board in German *b*.

Advanced German. *One unit.*

This examination is open to candidates who have had the equivalent of a four years' course, with an average of 120 full hour periods per year. At the end of this course the student should be able to read, after brief inspection, any (save technical) modern German literature, if free from unusual textual difficulties; to put into German a passage of simple English prose, or to write in that language a brief theme on some assigned topic within his range; and to answer in German questions relating to the lives and certain works of the authors studied.

The examination will consist of three parts: —

(*a*) The writing in German of a paragraph, original or translated.

(*b*) The translation into English of extracts from at least three distinctively different authors. It is believed that the requisite facility may be acquired by reading in addition to the amount mentioned under Intermediate German, about five hundred pages of good literature in prose and verse.

(*c*) An oral test of proficiency in hearing and pronouncing German.

[The following list is made up from works suitable for reading in preparation for this examination: Fouqué's Undine; Scheffel's Ekkehard; Ludwig's Zwischen Himmel und Erde; Freytag's Soll und Haben; Hauff's Lichtenstein; Goethe's Dichtung und Wahrheit (extracts), Die neue Melusine, Hermann und Dorothea; Lessing's Minna von Barnhelm, Schiller's Wilhelm Tell, Jungfrau von Orleans, Geschichte des dreissigjährigen Krieges (third book); Grillparzer's Sappho; Kleist's Prinz von Homburg; Fulda's Talisman.]

In place of the examination in Advanced German, a candidate may offer the examination of the College Entrance Examination Board in German *bc*.

Elementary French. *Two units.*

It is expected that the candidate will have studied the subject in a systematic course for two school years, each covering the

equivalent of 120 sixty-minute periods, during which special attention will have been given to pronunciation and to writing from dictation, as well as to the use of clear, idiomatic English in translation.

The examination will consist of two parts: —

(*a*) The translation into French of easy English sentences to test the candidate's knowledge of the following subjects: the conjugation of the regular and the most frequently recurring irregular verbs; the forms and positions of personal pronouns; the uses of the other pronouns and of possessive, demonstrative, and interrogative adjectives; the variation of nouns and adjectives for gender and number (except rare cases); the partitive construction. Proficiency may also be tested by questions on these topics.

(*b*) The translation at sight of a passage of easy French. It is believed that the requisite facility may be acquired by the reading of not less than three hundred and fifty pages of simple prose, with preference given to narrative.

[The following list is made up from works suitable for reading in preparation for this examination: The easier stories of Daudet, Verne, and Erckmann-Chatrian; Foa's Le petit Robinson and Contes Biographiques; Enault's Le Chien du Capitaine; Malot's Sans Famille; About's Le Roi des Montagnes; Labiche and Martin's La Poudre aux Yeux and Le Voyage de M. Perrichon; Sarcey's Le Siège de Paris.]

In place of the examination in Elementary French a candidate may offer the examination of the College Entrance Examination Board in French *a*.

Intermediate French. *One unit.*

It is expected that the candidate will have passed, in addition to the work done in preparation for Elementary French, an additional year's work of 120 hours. He should thus have acquired the ability to translate with facility ordinary prose or verse similar to that of the preparatory course, and to answer briefly in French questions asked in that language by the instructor. Oral practice and dictation should therefore be continued in this third year, together with a more detailed study of syntax, par-

ticularly of the use of moods and tenses, and of word formation and common idiomatic phrases.

The examination will consist of two parts: —

(*a*) The translation into French of a connected passage of simple English.

(*b*) The translation at sight of passages of ordinary French prose or dramatic verse. It is believed that the requisite facility may be acquired by reading, in addition to the amount required for Elementary French, not less than four hundred pages of prose and verse, preference still being given to narrative form.

[The following list is made up from works suitable for reading in preparation for this examination: About's stories; Daudet's La Belle-Nivernaise; La Brète's Mon Oncle et mon Curé; Loti's Pêcheur d'Islande; George Sand's Les Maîtres Mosaïstes; Mérimée's Colomba; Thierry's Récits des Temps mérovingiens; Thiers's L'Expédition de Bonaparte en Egypte; Vigny's La Canne de Jonc; Corneille's Horace; Molière's L'Avare and Le Bourgeois Gentilhomme; Racine's Athalie; Augier and Sandeau's Le Gendre de M. Poirier; Coppée's poems.]

In place of the examination in Intermediate French a candidate may offer the examination of the College Entrance Examination Board in French *b*.

Advanced French. *One unit.*

This examination is open to candidates who have had the equivalent of a four year's course, with an average of 120 full hour periods per year. At the end of this course the student should be able to read at sight, with the help of a vocabulary of special or technical expressions, difficult French of not earlier than the seventeenth century; to write in French a short essay on some simple subject connected with the works read in preparation, and to take part in a simple conversation in French.

The examination will consist of three parts: —

(*a*) The writing in French of an original passage of at least 150 words on some assigned subject.

(*b*) The translation into English of extracts from at least three distinctly different authors. It is believed that the re-

quisite facility may be acquired by reading, in addition to the amount mentioned under Intermediate French, from six hundred to one thousand pages of standard French, inclusive of works merely commented upon in class.

(*c*) An oral test of proficiency in hearing and pronouncing French.

[The following list is made up from works suitable for reading in preparation for this examination: Taine's Origines de la France contemporaine; Sainte-Beuve's Causeries du Lundi (Holt Ed.); Voltaire's Prose (Heath Ed.); Balzac's La Recherche de l'Absolu; Dumas' Les trois Mousquetaires (Ginn Ed.); Pelissier's Anthologie des Prosateurs français contemporains (Paris, Delagrave Ed.); Racine's Andromaque, Britannicus, Athalie; Corneille's Cinna and Polyeucte; Molière's Les Précieuses Ridicules; Beaumarchais' Mariage de Figaro; Hugo's Hernani and Ruy Blas.]

In place of the above, a candidate may offer the examination of the College Entrance Examination Board in French *bc.*

Elementary Latin. *Two units*

The Latin reading shall be not less in amount than Cæsar, Gallic War, I—IV, and should be selected by the schools from Cæsar (Gallic War and Civil War) and Nepos (Lives). Candidates will be examined in translation at sight of passages from the above authors, also in grammar and composition.

In place of the examination for two units in Elementary Latin a candidate may offer the following examinations of the College Entrance Examination Board:

New Requirements, 3.

Intermediate Latin. *One unit.*

The Latin reading, without the prescription of particular authors and works, shall be not less in amount than Cæsar, Gallic War, I—IV, and Cicero, the orations against Catiline, for the Manilian Law, and for Archias; this reading should be selected from Cæsar (Gallic War and Civil War) and Nepos (Lives), Cicero (orations, letters, and De Senectute) and Sallust (Catiline and Jugurthine War).

Candidates will be examined in translation at sight of

passages from Cæsar and Cicero. The vocabulary, constructions, and range of ideas will be suited to the preparation secured by the reading indicated above. There will also be an examination on the following prescribed reading: Cicero, orations for the Manilian Law and for Archias.

Or the requirement in poetry, as defined under Advanced Latin, may be offered as optional in place of the third year prose.

The examinations in grammar and composition will demand thorough knowledge of all regular inflections, all common irregular forms, and the ordinary syntax and vocabulary of the prose authors read in school, with ability to use this knowledge in writing simple Latin prose. The words, constructions, and range of ideas called for in the examination in composition will be such as are common in the reading of the years covered by the examination.

In place of the examination for three units in Intermediate Latin a candidate may offer the following examinations of the College Entrance Examination Board:

New Requirements, 1, 2, and 4.

Advanced Latin. *One unit.*

I. AMOUNT AND RANGE OF THE READING REQUIRED

1. The Latin reading, without regard to the prescription of particular authors and works, shall be not less in amount than Cæsar, Gallic War, I—IV; Cicero, the orations against Catiline, for the Manilian Law, and for Archias; Vergil, Aeneid, I—VI.

2. The amount of reading specified above shall be selected by the schools from the following authors and works: Cæsar (Gallic War and Civil War) and Nepos (Lives); Cicero (orations, letters, and De Senectute) and Sallust (Catiline and Jugurthine War); Vergil (Bucolics, Georgics, and Aeneid) and Ovid (Metamorphoses, Fasti, and Tristia).

II. SUBJECTS AND SCOPE OF THE EXAMINATIONS

1. *Translation at sight.* Candidates will be examined in translation at sight of both prose and verse. The vocabulary,

constructions, and range of ideas of the passages set will be suited to the preparation secured by the reading indicated above.

2. *Prescribed Reading.* Candidates will be examined also upon the following prescribed reading: Cicero, orations for the Manilian Law and for Archias, and Vergil, Aeneid, I, II, and either IV or VI at the option of the candidate, with questions on subject-matter, literary and historical allusions, and prosody. Every paper in which passages from the prescribed reading are set for translation will contain also one or more passages for translation at sight; and candidates must deal satisfactorily with both these parts of the paper, or they will not be given credit for either part.

3. *Grammar and Composition.* See statement under Intermediate Latin.

In place of the examination for four units in Latin a candidate may offer the following examinations of the College Entrance Examination Board:

New Requirements, 1, 2, 4, and 5.

SUGGESTIONS CONCERNING PREPARATION

Exercises in translation at sight should begin in school with the first lessons in which Latin sentences of any length occur, and should continue throughout the course with sufficient frequency to insure correct methods of work on the part of the student. From the outset particular attention should be given to developing the ability to take in the meaning of each word —and so, gradually, of the whole sentence—just as it stands; the sentence should be read and understood in the order of the original, with full appreciation of the force of each word as it comes, so far as this can be known or inferred from that which has preceded and from the form and the position of the word itself. The habit of reading in this way should be encouraged and cultivated as the best preparation for all the translating that the student has to do. No translation, however, should be a mechanical metaphrase. Nor should it be a mere loose

paraphrase. The full meaning of the passage to be translated, gathered in the way described above, should finally be expressed in clear and natural English.

A written examination cannot test the ear or tongue, but proper instruction in any language will necessarily include the training of both. The school work in Latin, therefore, should include much reading aloud, writing from dictation, and translation from the teacher's reading. Learning suitable passages by heart is also very useful, and should be more practised.

The work in composition should give the student a better understanding of the Latin he is reading at the time, if it is prose, and greater facility in reading. It is desirable, however, that there should be systematic and regular work in composition during the time in which poetry is read as well; for this work the prose authors already studied should be used as models.

Elementary Greek. *Two units.*

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course for two years. It will consist of two parts, which cannot be taken separately: —

(*a*) The translation at sight of passages of simple Attic prose.

(*b*) An examination on Xenophon's Anabasis, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms of the language.

Before taking the elementary examination the candidate should have read, in addition to the usual grammar work, at least four books of Xenophon's Anabasis, or an equivalent.

In place of the examination in Elementary Greek a candidate may offer the following examinations of the College Entrance Examination Board.

Greek *a* i and ii, *b*, and *g*.

Advanced Greek. *One unit.*

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course for three years.

The two parts of the examination may be taken separately: —

(*a*) The translation at sight of an average passage of Homer; with questions on ordinary forms, constructions, and idioms, and on prosody.

(*b*) The translation into Attic prose of a passage of connected English narrative. The passage set for translation will be based on some portion of the Greek prose works usually read in preparation for college.

Before taking the examination in Advanced Greek the candidate should have completed at least four books of Xenophon's Anabasis, or their equivalent in Attic prose, and six books of Homer's Iliad, or their equivalent in the Odyssey. It is recommended that Greek composition accompany all stages of the preparation, and that the pupil be practiced in reading Greek aloud from the beginning of the course.

In place of the examination in Advanced Greek a candidate may offer the following examinations of the College Entrance Examination Board.

Greek *a* i, *b*, *c* or *ch*, *f*, and *g*.

Elementary History. *One unit.*

One of the following: —

1. Greek and Roman History. (*a*) The history of Greece to the death of Alexander, with due reference to Greek life, literature, and art, as treated in the histories of Botsford, Oman, West, or Myers. (*b*) The history of Rome to the accession of Commodus, with due reference to Roman literature and government. Such texts as those of Morey, Botsford, West, or Allen will indicate the character of the work desired.

While the periods indicated above will be accepted as satisfying the entrance requirements in ancient history, it is strongly recommended that the study of the history of Greece be continued to the conquest of Greece by Rome, and that the history of Rome be pursued to the fall of the Western Empire.

This does not necessarily imply any increase in the time devoted to Greek and Roman history.

2. English History. The history of England, with due reference to social and political development. The histories of Andrews, Larned, and Montgomery will indicate the character of the work expected.

3. The history and government of the United States. Such texts as McLaughlin's History of the American Nation, Johnston's or Channing's History of the United States, and Fiske's Civil Government should be used.

It is recommended that all candidates for admission to the courses leading to the degree of A.B. or B.D. should offer Greek and Roman history.

The elementary requirement in history implies one year's work of not less than five periods a week. Equivalents for the subjects named above will be accepted, but candidates desiring to offer substitutes must give notice to the Secretary of the Faculty at least one month previous to the time set for the examination. Work in the text-book should be constantly accompanied by collateral reading. The attention of teachers is called to the Report of the Committee of Seven, published by the Macmillan Company, New York, under the title, "The Study of History in Schools."

In place of any one of the examinations described above a candidate may offer any one of the four examinations in History of the College Entrance Examination Board.

Advanced History. *One unit.*

One of the following: —

1. The History of Greece and Rome, as described above, for those only who have offered English history or the history and government of the United States as primary subjects.

2. The History of England as described above, for those only who have offered Greek and Roman history as primary subjects.

3. The History of the United States, for those only who have offered Greek and Roman history as primary subjects.

Each of these subjects requires one year's study of not less than five recitation-periods a week. A note-book of not less

than fifty written pages, based upon three hundred pages of collateral reading, must be presented at the time of the examination. Equivalents for the subjects outlined above will be accepted, upon due notice, as indicated above under Elementary History.

In place of any of the examinations in Advanced History a candidate may offer any one of the four examinations in History of the College Entrance Examination Board, provided that the subject so offered has not been accepted for the Elementary History requirement.

Mathematics.

A knowledge of the metric system, and ability to perform accurately the ordinary processes of arithmetic, are presumed. Subjects 1 and 2 are required in the Primary Group.

1. Algebra, through quadratic equations in one and two unknown quantities, the progressions, ratio and proportion, and the binomial theorem for positive integral exponents.

One and one-half units.

2. Plane Geometry, including the usual theorems on straight lines, angles, rectilinear figures, circles, and regular polygons; similar triangles and proportion; construction; original exercises in demonstration; numerical problems in mensuration.

One unit.

3. Advanced Algebra: Permutations and combinations; complex numbers and the graphical representation of sums and differences; determinants including the use of minors, and the solution of linear simultaneous equations; solution of numerical equations of higher degree and so much of the theory of equations, with graphical methods, as is necessary for their treatment, including Descartes' rule of signs and Horner's method. Credit in Advanced Algebra is given only on examination.

One-half unit.

4. Solid Geometry, including properties of straight lines and planes, dihedral and polyhedral angles; of projections, of polyhedrons, including prisms, pyramids, and the regular solids; of

cylinders, cones, and spheres; of spherical triangles, and the measurement of surfaces and solids. *One-half unit.*

5. Plane Trigonometry, including the definition and relations of the six trigonometrical functions as ratios, proof of important formulæ, theory of logarithms and use of tables, solution of right and oblique plane triangles. *One-half unit.*

In the last three subjects, the school should insist upon the same amount of work and aim at the same standard of scholarship as the college requires in its courses in these subjects.

In place of the examinations in Mathematics a candidate may offer the examinations of the College Entrance Examination Board as follows:

Math. *a* for 1; Math. *c* for 2; Math. *b* for 3; Math. *d* for 4; Math. *f* for 5.

Physics. *One unit.*

The unit in Physics consists of at least 120 hours of sixty minutes each. Time spent in the laboratory shall be counted at one-half its face value. The course of instruction should include: (1) The study of one standard text-book. (2) Individual laboratory work consisting of experiments requiring at least the time of 30 double periods. Each student should perform at least 30 experiments, so distributed as to cover as fully as possible the subject matter of the text-book.

In lieu of the presentation of the laboratory note-book, at the time of the examination, the candidate must present a certificate in the following form:

TEACHER'S CERTIFICATE

..... School

..... 19

I certify that ..... has personally performed and properly recorded in a suitable note-book ..... experiments in the physical laboratory of the ..... School, during the year .....

The entire course has occupied time equal to ..... hours of 60 minutes each, of which .... hours have been given to the laboratory work and ..... hours to lecture and recitation work.

Signed .....

Teacher of Physics.

The teacher may here enter the final grade of ... . per cent.

• In place of the above, candidates may present the examination of the College Entrance Examination Board in Physics.

Chemistry. *One unit.*

Preparation for this requirement presupposes a course in general inorganic chemistry (non-metals and metals) of not less than five periods a week for a year. The amount of class work should equal that in An Introduction to the Study of Chemistry, by Ira Remsen, and the experiments should be equivalent to those in Remsen's Laboratory Manual. Time spent in the laboratory shall be counted at one-half its face value. The experiments must be performed by the student, and a certified laboratory note-book must be presented at the time of the examination.

In place of the above, candidates may present the examination of the College Entrance Examination Board in Chemistry.

Botany and Zoology. *One unit each.*

In Botany and Zoology the examiners give more weight to the character of the work than to time spent; but at least five periods a week for a year must be given to each subject presented, and of this at least a half should consist of laboratory work. Certified copies of laboratory note-books must be presented. The work should be in structural and physiological lines and should include a detailed study of at least ten types.

In place of the examinations in Botany and Zoology, candidates may offer the examinations in Botany and Zoology of the College Entrance Examination Board.

Geology and Geography. *One unit.*

At least five periods a week for a year must have been given to the subject presented. There should have been some laboratory work and excursions. Certified copies of note-books of laboratory work and excursions must be presented.

1. Geology: Norton, Brigham, or book of equivalent grade.
2. Geography: Davis, or book of equivalent grade.

In place of the examination in Geology and Geography, can-

didates may offer the examination in Geography of the College Entrance Examination Board.

Freehand Drawing.* *One-half unit.*

The examiner requires evidence of ability to make an accurate outline or shaded drawing from a group of geometric models, or a shaded drawing from a simple cast. Such a knowledge of the fundamental principles of perspective is required as shall enable the student to draw a simple geometric figure without the use of a model. Certified drawings must be submitted and the student may be examined on all points in doubt.

In place of the above the candidate may offer the examination in drawing of the College Entrance Examination Board.

Mechanical Drawing.* *One-half unit.*

Accuracy and neatness in drawing is of the first importance, and no amount of work will make amends for neglect in these respects. The student must be familiar with the use of ordinary instruments, and able to solve geometrical problems with accuracy and rapidity. He must also be practiced in the drawing of the ellipse, the parabola, and the hyperbola, and have an elementary knowledge of projection, intersection, and development. The suggested course is included in the first one hundred pages of Anthony's Elements of Mechanical Drawing. Certified drawings must be submitted for approval.

Shopwork.*

The following units are given for courses satisfactorily pursued in well organized and fully equipped manual training or technical high schools in which the broad foundations of manual and graphic culture are given. The elementary work in the several courses must be thoroughly covered, and no credit will be given for premature engineering work.

Joinery	*One-half unit*
Wood Turning and Elementary Pattern Making	*One-half unit*
Forging	*One-half unit*
Bench and Machine Metal Fitting	*One-half unit*

*Not more than two units may be counted by any candidate in the subjects of Drawing and Shopwork.

Details of the work required for preparation in the above courses may be obtained by application to the Department of Mechanic Arts.

Elementary Economics. *One-half unit.*

Preparation for Economics presupposes that the candidate has studied the subject in a systematic course of at least three periods a week for one full year. Credit in Economics will be given only on examination. The examination will be based upon such text-books as Bullock's or Seager's Introduction to the Study of Economics. A knowledge of civics and, particularly, modern industrial history is of great value in supplementing the study of economic theory.

Music.

Entrance credit in Music is given only on examination. Not more than one unit in Music may be counted by any candidate,

(*a*) MUSICAL APPRECIATION. *One-half unit.*

The examination will be adapted to the attainment of those who have had one year's systematic training, with three lessons a week, or its equivalent. The candidate is expected to have (1) a general knowledge of the principal musical forms—song, classic dance, fugue, sonata (all movements), symphony—and of their historical development; (2) a general knowledge of the lives and environment of at least ten composers, including Bach, Mozart, Beethoven, Schubert, Chopin, and five of the following: Purcell, Handel, Gluck, Haydn, Cherubini, Weber, Rossini, Glinka, Mendelssohn, Schumann, Wagner, Verdi; (3) familiarity with certain designated works, the list of which may be had on application to the Secretary of the College. In the examination on these works, the candidate will be expected to identify characteristic portions of the works set, when played by the examiner; and to give intelligent information concerning the form and character of the works themselves. The test will not require ability to perform, nor to read from printed music.

(*b*) HARMONY. *One-half unit.*

The examination will be adapted to the proficiency of those who have had one year's systematic training, with three lessons a week, or its equivalent. The candidate should have acquired (1) the ability to harmonize, in four vocal parts, simple melodies of not fewer than eight measures, in soprano or in bass: these melodies will require a knowledge of triads and inversions, of diatonic seventh chords and inversions, in the major and minor modes; and of modulation, transient or complete, to nearly-related keys; (2) analytical knowledge of ninth chords, all non-harmonic tones, and altered chords (including augmented chords). [Students are encouraged to apply this knowledge in their harmonization.]

It is urgently recommended that systematic ear-training (as to interval, melody, and chord) be a part of the preparation for this examination. Simple exercises in harmonization at the pianoforte are recommended. The student will be expected to have a full knowledge of the rudiments of music, scales, intervals, and staff-notation, including the terms and expression-marks in common use.

(*c*) COUNTERPOINT. *One-half unit.*

The examination will be adapted to the proficiency of those who, having completed a year's study of Harmony, have also studied Counterpoint in a systematic course of three lessons a week through one school year. The candidate should have had training in pianoforte-playing sufficient to enable him to render the Two-Part Inventions of Bach. The year's work should consist principally of written exercises on given or invented themes, as follows: —

Chorals and melodies harmonized, with use of passing and ornamental tones; the several orders of Counterpoint in two, three, and four voices, with and without *cantus firmus;* elementary practice in Double Counterpoint; Imitative Counterpoint in the style of the simpler Two-Part and Three-Part Inventions and Choral Preludes of Bach; general analytical study of contrapuntal compositions of larger scope, including detailed analy-

sis (both as a harmonic scheme and as to contrapuntal treatment) of not less than ten pages from at least four fugues of Bach's Well-Tempered Clavichord.

There should be some practice with the C clef, in reading and in writing. Familiarity with the alto and tenor clefs is especially desirable.

(*d*) PIANOFORTE, OR (*e*) VOICE, OR (*f*) VIOLIN. *One-half unit.*

The examination in each of these subjects will consist of a test in theory, and a test in performance. The former will be conducted in writing, and will be adapted to the proficiency of those who have had one year's systematic training, with one lesson a week, or its equivalent. The candidate should have acquired:

A knowledge of the rudiments of music, scales, intervals, and staff-notation, including the terms and expression-marks in common use; the ability to analyze the harmony and form of hymn-tunes and simplest pieces for the pianoforte, involving triads and the dominant seventh chord and their inversions, passing tones, and modulation to nearly-related keys; the ability to harmonize, on paper, in four vocal parts, melodic fragments involving the use of triads and the dominant seventh chord and their inversions in major keys.

As a basis of the test in performance, the candidate is to furnish a detailed statement from the teacher, showing the course of instrumental or vocal study pursued.

In place of the above, candidates may offer the corresponding examination of the College Entrance Examination Board: Music *a*, *b*, *c*, and *d* or *e* or *f*.

METHODS OF ADMISSION

Admission to Tufts College may be obtained by examination, by certificate, or by a combination of the two methods. Every candidate for admission must present a testimonial of good character from the Principal under whom he was prepared for college.

Admission by Examination

In June, 1912, the admission examination of this College will be the examinations of the College Entrance Examination Board, of which Tufts College is a member. The examinations will be held during the week June 17–22, 1912.

All applications for examination must be addressed to the Secretary of the College Entrance Examination Board, Post Office Sub-Station 84, New York, N. Y., and must be made upon a blank form, to be obtained from the Secretary of the Board upon application.

Applications for examination at points in the United States east of the Mississippi River, also at Minneapolis, St. Louis, and other points on the Mississippi River, must be received by the Secretary of the Board at least two weeks in advance of the examinations, that is, on or before Monday, June 3, 1912; applications for examination elsewhere in the United States or in Canada must be received at least three weeks in advance of the examinations, that is, on or before Monday, May 27, 1912; and applications for examination outside of the United States and Canada must be received at least five weeks in advance of the examinations, that is, on or before Monday, May 13, 1912.

Applications received later than the dates named will be accepted when it is possible to arrange for the admission of the candidates concerned, but only upon the payment of $5.00 in addition to the usual fee.

The examination fee is $5.00 for all candidates examined at points in the United States and Canada, and $15.00 for all candidates examined outside of the United States and Canada. The fee (which cannot be accepted in advance of the application) should be remitted by postal order, express order, or draft on New York to the order of the College Entrance Examination Board.

A list of the places at which examinations are to be held by the Board in June, is published about March 1. Requests that the examinations be held at particular points, to receive proper consideration, should be transmitted to the Secretary of the Board not later than February 1.

For the convenience of those who present the examinations of the College Entrance Examination Board, the following table of equivalents is presented:

TUFTS COLLEGE ENTRANCE SUBJECTS	COLLEGE ENTRANCE EXAMINATION BOARD EQUIVALENT
English A	English *a*
English B	English *b*
Elementary German	German *a*
Intermediate German	German *b*
Advanced German	German *bc*
Elementary French	French *a*
Intermediate French	French *b*
Advanced French	French *bc*
Elementary Latin	Old requirements, *a* i and *b*
	New requirements, 3
Intermediate Latin	Old requirements, *a* i and ii, *b*, and *c* or *d*
	New requirements, 1, 2, and 4
Advanced Latin	Old requirements, *a* i, *b*, *c*, *l*, *p*, and *q* or *dq*
	New requirements, 1, 3, 4, and 5
Elementary Greek	Greek *a* i and ii, *b*, and *g*
Advanced Greek	Greek *a* i, *b*, *c* or *ch*, *f*, and *g*
Elementary History	History, *a*, *b*, *c*, or *d*
Advanced History	History, *a*, *b*, *c*, or *d*
Mathematics	
Algebra	Mathematics *a*
Plane Geometry	Mathematics *c*
Advanced Algebra	Mathematics *b*
Solid Geometry	Mathematics *d*
Trigonometry	Mathematics *f*
Physics	Physics
Chemistry	Chemistry
Botany	Botany
Zoology	Zoology
Geology and Geography	Geography
Freehand Drawing	Drawing
Music, *a*, *b*, *c*, *d*, *e*, *f*	Music, *a*, *b*, *c*, *d*, *e*, *f*

Entrance examinations will be conducted at Tufts College in September. These examinations are held on the Saturday, Monday, and Tuesday preceding the beginning of the college

year, in accordance with the program printed in the calendar, pages 6 and 7.

All candidates for examination in September are required to register at the office of the Registrar before taking their examinations. A fee of $5.00 is charged all candidates for the September examinations. Those who subsequently enter the Department of Arts and Sciences will not be required to pay the registration fee.

At the regular examination those who will be candidates for admission to the Freshman class one year later may present themselves for examination in the subjects of the Primary Group, and in others in which their teachers may certify that they are adequately prepared.

Admission by Certificate

In place of examinations, certificates will be accepted from preparatory schools which have been approved by the New England College Entrance Certificate Board. All schools in New England which desire the certificate privilege should apply to the Secretary of the Board, Professor Nathaniel F. Davis, 159 Brown Street, Providence, R. I., before April 1st of the year for which the certificate privilege is desired.

Applications for the certificate privilege for schools outside of New England should be made by the Principal on a blank provided for the purpose by the Registrar of the College. Applications should be received before April 1st, in order that the school may be placed upon the approved list for the next academic year.

The academic diploma of the Regents of the State of New York will be accepted in satisfaction of the requirements for admission when such diploma covers the subjects required for entrance.

Credit in the following subjects, which are outside the ordinary preparatory school curriculum, is allowed only upon examination: Advanced Algebra, Economics, and Music.

Certificates showing that candidates have fulfilled the en-

II. FOR STUDENTS IN THE ENGINEERING SCHOOL:

9:30–10:30 A.M.—All students registering for the first time will pay the registration fee of five dollars at the Bursar's office, unless they have already paid an examination fee to the College.

10–12 A.M.—All students in this School obtain blanks and file programs at the Registrar's office.

Members of the three upper classes register in accordance with programs prepared at conferences during the June examination period.

11 A.M. — All Freshmen assemble in the chapel for instructions concerning registration, and information regarding courses.

Regular program appointments are in force on Friday.

Consultations concerning programs for the second half-year are held by appointments with advisers and major instructors during the examination period. On the first day of the second term, between 9 and 12 o'clock, students file their individual programs. Recitations begin in accordance with the regular program on Tuesday, the second day of the term.

A registration fine of two dollars is imposed upon students who fail to register in person during the time prescribed above. This fine must be paid to the Bursar before registration can be permitted. This rule does not apply to students registering for the first time. Students are not recognized as members of classes until they have met all requirements of registration.

During the hours set apart for registration, instructors may be seen for consultation and for approval of plans of study, in rooms to be announced by posted bulletins.

PROGRAM LIMITATION

Plans of study are subject to the following regulations:

I. FOR STUDENTS IN THE SCHOOL OF LIBERAL ARTS AND THE CRANE THEOLOGICAL SCHOOL:

No Freshman shall take a program of more than sixteen term hours for the first half-year; nor shall a program of more than fifteen term hours be taken by any student who has received for the preceding half-year grade L in subjects aggregating three term hours, or grade C in subjects aggregating more than six term hours; except that each student is permitted to take a program of eighteen hours in his Junior year, with the consent of his major instructor. But a student who has failed in a subject may repeat that subject, provided his program is not thereby increased to more than eighteen term hours.

A program in excess of eighteen term hours shall not be allowed except by special permission of the Faculty.

Physical Training is disregarded in the consideration of program limitation.

II. FOR STUDENTS IN THE ENGINEERING SCHOOL:

The Freshman program is prescribed. Permission to vary the Freshman program, to take a program in excess of eighteen term hours, or to take a subject out of course, must be obtained by petition to the Committee on Promotions.

PROGRAM

All subjects whose hours are not definitely fixed in the tabular program are so far as possible assigned at a meeting in Ballou 4 at 12 M. on the second day of the first half-year, and at the same hour on the first day of the second half-year. Every student concerned is required to be present at this time, either in person or by a proxy furnished with a complete tabular program of class engagements. Every instructor concerned is expected to be present in person. These appointments supersede all others. No assignment or change of hour is official except as posted by the Committee on Program.

Any instructor is permitted, after the second full week of a term, to transfer a subject to another program hour, under the following conditions: (a) all students taking the subject must have the new hour free; (b) previous notice must be given to the Committee on Program; (c) the change, if finally made, must be reported at the College Office.

If such a change can be made in two consecutive years, the subject may be permanently transferred to the new hour.

CHANGES IN REQUIREMENTS

It is the policy of the Faculty not to introduce changes in requirements without due notice in the catalogue, and not to impose additional requirements upon classes already in college. Immediate changes in the curriculum and in the program may occasionally be necessary, and under such circumstances the Faculty reserves the right to make equitable adjustment for students already in college.

PROMOTIONS

All candidates for degrees are classified as Freshmen until they have removed all entrance conditions.

Candidates for the degree of Bachelor of Arts, or Bachelor of Science in the School of Liberal Arts must have received, for promotion to the Sophomore class, a credit of not less than twenty-seven term hours, and for promotion to the Junior class a credit of not less than fifty-seven term hours. To become a member of the Senior class, a student must have completed all the prescribed work, and have credit for not less than eighty-seven term hours.

Candidates for the degree of Bachelor of Science in the Engineering School must have received, for promotion to the Sophomore class, a credit of not less than twenty-nine term hours; for promotion to the Junior class a credit of not less than sixty-four term hours; and for promotion to the Senior class a credit of not less than ninety-nine term hours.

GRADES OF SCHOLARSHIP

A student's rank is officially recorded by letters, as follows: **A,** excellent; **B,** good; **C,** fair; **L,** passed with low standing; **F,** work incomplete or unsatisfactory; **FF,** complete failure.

The mark **F** imposes a condition which must be removed at a date to be determined by the Committee on Promotions, on consultation with the instructor. In case a mark of **F** is not removed at the date thus determined, the entry will be changed

to **FF**. The student must then discontinue any dependent subjects which he is taking, and can obtain a clear record only by repeating the subject in which **F** was given. The responsibility for the removal of the condition rests with the student, who is required to make the necessary arrangement with the instructor and to present at the office a statement from the instructor that the work has been accomplished.

Reports of the work of Freshmen are sent to parents after the first term. Reports for the year are sent in July to all.

Except as above stated, marks are not issued from the office.

MAJOR SUBJECTS

Every candidate for the degree of Bachelor of Arts shall choose a major subject before the beginning of the Sophomore year.

A change of major subject may be made not later than the end of the Junior year, by vote of the Committee on Promotions on petition approved by the two major instructors concerned.

A second major subject may be granted not later than the end of the Junior year, under the same conditions.

HONORS

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the School of Liberal Arts or in the Engineering School who shall have attained Grade A in approved subjects aggregating not less than eighteen term hours in a major department, and an average of Grade B in the collateral subjects. Subjects marked in the catalogue with an asterisk (*) will not count for Honors. Those marked with a double asterisk (**) will be counted for Honors only when special requirements, to be defined by the instructors, have been complied with. Final Honors will be conferred only upon recommendation of the head of the department in which Honors are desired.

HONORABLE MENTION will be made, in the Commencement program and in the annual catalogue, of a student who has at-

tained, during the two years immediately preceding graduation, Grade A in nine term hours and not less than Grade B in three additional term hours of approved work in one department. Subjects marked in the Catalogue with an asterisk (*) or with a double asterisk (**) are under the conditions explained above as applying to Final Honors.

Candidates for Honorable Mention are expected to report to the Office on or before May 1 the department or departments in which they look for such distinction.

The subjects open for Honors and Honorable Mention in the five major departments in the Engineering School are as follows: 45-1, 45-2, and 45-12 Applied Mechanics may be counted in any department; also, in the Civil Engineering department, all subjects in Civil Engineering (41) except 41-3 Surveying; in the Structural Engineering department, all subjects in Applied Mechanics (45) and Structural Engineering (47); in the Mechanical Engineering department, all subjects in Mechanical Engineering (51); in the Electrical Engineering department, all subjects in Electrical Engineering (61); and in the Chemical Engineering department, all subjects in Chemistry (35) except 35-1 General Chemistry.

ADMISSION FROM OTHER COLLEGES

Students entering Tufts College, after pursuing study in any other college of equal rank, and being honorably dismissed therefrom, are credited with the number of hours of work actually done toward the requirements of Tufts College, as certified by the proper authorities of the college from which the student comes. Such students must present satisfactory certificates showing the amount and character of work already accomplished, in order to obtain credit on a course of this College.

SPECIAL STUDENTS

Students who are not candidates for a degree, and who wish to pursue a special course of cognate studies, will be admitted to the College, subject to the following regulations:—

1. Every Special Student shall choose a major department, and shall

make up a plan of study under the direction and subject to the approval of the major instructor.

2. The student shall satisfy the instructor in each subject included in the approved plan of study that he is able to pursue the work.

3. First-year Special Students are limited to sixteen program hours, and thereafter the same rules apply to them as to regular students.

4. A Special Student, on leaving College, shall be entitled to a certificate giving the grade attained in each subject pursued, and signed by the President and the Registrar.

TERMS AND VACATIONS

Commencement occurs on the third Wednesday in June, and the college year begins on the Thursday following the third Wednesday in September. The year is divided into two terms. There are no college exercises during a recess of five days at Thanksgiving, twelve days at Christmas, four days at the mid-year period, and seven days beginning with the Wednesday evening preceding the nineteenth of April. Washington's Birthday and Memorial Day are holidays. An examination period of five days is held at the close of each half-year, during which time the daily class exercises are suspended.

Students are required to report in person at the Registrar's office within two hours after the last program appointment of the student preceding each vacation of more than a single day, except at the mid-year period; and within two hours before the first program appointment following such vacation.

A fine of two dollars will be imposed on each student who shall fail to report as above provided. The regularly appointed registration of studies at the beginning of each term shall be construed as reporting in person.

ABSENCES

Students are required to notify the Registrar at the beginning of an absence from any cause involving more than three consecutive program appointments. This report may be made in advance, and should state the cause of absence and its probable duration. A similar report is to be made before entering upon college work after the absence.

These reports are for the information of the college authori-

ties, and do not excuse the student from chapel attendance, nor from his obligations to the various instructors.

For the first failure to make such a report a fine of fifty cents shall be levied, and for each subsequent failure a fine of two dollars. In case of the absence of any student organization numbering not less than ten persons, notice may be given for all by one authorized representative.

No student organization shall be allowed to make engagements involving absence from college exercises unless such engagements are approved by the appropriate committee of the Faculty.

A report filed in accordance with these regulations shall not take the place of the required registration before and after vacations of more than a single day.

Absence from Examinations.—Students absent from examinations and requiring special examinations to make up for such absence are charged two dollars for each special examination.

OFFICE HOURS

The President may be found in his office in the morning from 8.45 to 9.45. The Dean of the School of Liberal Arts is in his office in Ballou Hall, and the Dean of Jackson College in her office in Miner Hall, throughout the forenoon, except for class engagements. The Dean of the Engineering School may be consulted at his office in the Bromfield-Pearson Building, between 11.00 and 1.00, and at other times by special appointment. The office of the Registrar and Secretary is open every morning, from 8.45 to 1.00, and every afternoon except Saturday, from 2.00 to 5.00. The Bursar will be in his office in Ballou Hall during term time, Monday, Wednesday and Friday mornings, from 8.30 to 12.00 o'clock, and on Thursday afternoon from 2.00 to 5.00; and in his office in Miner Hall on Tuesday from 2.30 to 5.00 and Thursday from 8.30 to 12.00.

RELIGIOUS OBSERVANCES

Goddard Chapel, erected in 1882-83, is the gift of Mrs. Mary T. Goddard, as a memorial of her husband, the late Thomas A.

Goddard. Morning prayers are held three times each week, at which attendance is required. The care of the pulpit on Sunday devolves upon the President. A trained choir, composed of men and women students, sings on Sunday. Attendance upon Sunday service is voluntary.

The RUSSELL LECTURE, established in accordance with a bequest of the late James Russell of Arlington, is delivered before the Trustees, Faculty, and students, on the third Wednesday in November, by either a clergyman or a layman, on a subject prescribed by the testator.

Two subjects are presented, in alternate years.

The subject for 1911 is "*The Sufficiency of the Promises of the Gospel to meet the Reasonable Wants of Man both in Time and in Eternity.*"

The subject for 1912 is "*The Importance of Christian Faith and Belief in the Formation of the Character of the Good Citizen and the Good Man.*"

TUFTS COLLEGE STUDIES

A publication called "Tufts College Studies" has been established, as a means of presenting to the world the results of original work done in the different departments of the College. The numbers, which are issued as material is ready, are distributed to educational institutions and learned societies. The College desires to establish regular exchanges of these Studies with publishing institutions at home and abroad. Correspondence regarding exchanges should be addressed to the Librarian of Tufts College. One volume and two numbers of a second volume of the scientific series have been issued, and a single number of the English series. The editorial board of TUFTS COLLEGE STUDIES for the current year is made up of the President of the College and Professors Metcalf, Hooper, Kingsley, and Wade.

ATHLETICS

The supervision of all athletic sports is vested in a Board of Directors of Athletics, consisting of nine members, three of whom are appointed from the Faculty, three from the Alumni, and three elected from the undergraduates. This board through its sub-committees controls the expenditure of all

moneys, the hiring of coaches, the arranging of games, the eligibility of players, and generally seeks to raise all college sports to a level of genuine usefulness. The Director of the Gymnasium limits the candidates for college teams to those students who have shown by a physical examination that they are qualified to engage in strenuous exercise.

EXPENSES

The charge for instruction in the School of Liberal Arts is *one hundred twenty-five dollars* a year, or *five hundred dollars* for the full course whether it be completed in three, four, or more years. A registration fee of five dollars is charged to all students entering the School of Liberal Arts or the Engineering School.

The charge for instruction in the Engineering School is *one hundred fifty dollars** a year, or *six hundred dollars* for the course.

In the case of students admitted to advanced standing, the fees will be based upon the amount of work done under the direction of Tufts College.

No part of the fees and charges for a term is returnable to the student if he leaves during the term.

Students in the chemical laboratories are charged for breakage, and not more than *four dollars* a term for chemicals used, according to the subjects taken. A fee of *two dollars and a half* a term is required for each laboratory course in the Department of Biology.

Half room-rent, including heat, ranges from twenty-five to ninety-one dollars, in the several dormitories. Students furnish their own rooms. Any special damage done by students to college property is charged in the term bills. All damage to dormitories other than normal wear is charged to the occupants. Rooms in the college halls will be open for occupancy of students on and after the Wednesday of the week preceding the opening of the college year, and will be closed on the Wednesday after Commencement. Non-resident students in all departments, except the Medical and Dental Schools, are subject to a fixed annual charge of ten dollars.

*Beginning with the class entering in 1912, the charge for tuition in the Engineering School will be one hundred and seventy-five dollars.

Students may obtain the use of day-rooms in the dormitories by arrangement with the Bursar, on payment of a moderate fee.

Payment of tuition, room rent, and other charges in all departments of the College is made in advance at the beginning of each half-year, on or before October first and March first.

All college charges are payable to the Bursar, and all arrangements with regard to rooms are to be made with him. The Bursar must certify that all college charges have been met before a student can receive his degree or a letter of honorable dismissal.

The Executive Committee of the Trustees has power to order the suspension or dismissal of a student for failure to keep his bills promptly paid, or for other good and sufficient cause.

In consideration of a hospital fee of *four dollars* per year resident students will be given free hospital treatment in cases of illness or accident, on application to the college office, provided that the cost to the College of such treatment shall not exceed seventy-five dollars for any one person in any one year.

The following estimates represent the fixed annual expenses, not including room-rent or the non-resident fee: —

	School of Liberal Arts	Engineering School
Tuition	$125.00	$175.00
Physical Training, including gymnasium and grounds, and T. C. A. A. ticket	15.00	15.00
Reading-room	1.00	1.00
Hospital	4.00	4.00
Board, $4.50 a week (36 weeks)	162.00	162.00
Total	$307.00	$357.00
Registration fee, at the beginning of the course	$5.00	$5.00

Special students in the School of Liberal Arts pay the initial registration fee and $20.00 a term for each subject of three hours a week or less, together with the usual laboratory fees.

STUDENTS' DRAFTS

The College issues drafts for the use of students in books of twenty-five to fifty dollars. These are freely negotiable in the college community and are becoming so in all banks and stores

in greater Boston. No commission is charged, and the holder is protected from loss or theft. The drafts are for sale at the Bursar's office and at the College Book Store.

INSURANCE

Arrangements may be made through the Bursar's office whereby students in any of the dormitories can insure their personal effects, including books, furniture, and wearing apparel. The cost of such insurance is fifty cents for one hundred dollars for one year. Insurance is placed only in multiples of one hundred dollars; no risk is taken for less than one hundred dollars, and all premiums are payable in advance.

THE DORMITORIES

East, West, Dean, Paige, and Curtis Halls are arranged with convenient rooms in suites, are warmed by steam, lighted by gas or electricity, and have good modern plumbing. These halls provide rooms for two hundred and fifty men.

REGULATIONS CONCERNING COLLEGE ROOMS

The annual assignment of rooms will take place in the month of May, at a time appointed by the Bursar, due notice being given upon the official bulletin board. Students occupying any room may retain it for the following academic year by signing a new room-agreement. All rooms not thus provided for will be offered for rent to members of the three upper classes. Rooms not assigned at the annual allotment will be open for choice to members of the entering class, in the order of application.

The right to occupy a college room is given only to the student or students to whom it is assigned: neither exchanges nor transfers of rooms are allowed, except by consent of the Bursar.

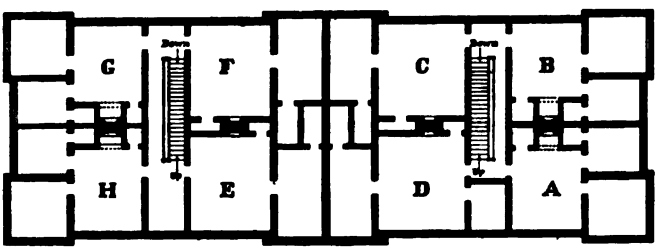
All rooms are for two students, except East 3, 12, 19, 22, 27, and 32, West 16½, and Curtis 4 and 12, and all rooms in Paige, which are for a single student each. Where more than two students occupy a room, the rent will be increased proportionately.

Each student receives his key on payment of fifty cents, which is refunded on the return of the key at the close of the college year.

The prices given for room rent in the lists below are for the whole room during the academic year, and include heat and care. The rooms are lighted with gas; Paige Hall has electricity also. Each suite is metered separately, and the occupants pay for the gas actually consumed. None of the rooms is furnished.

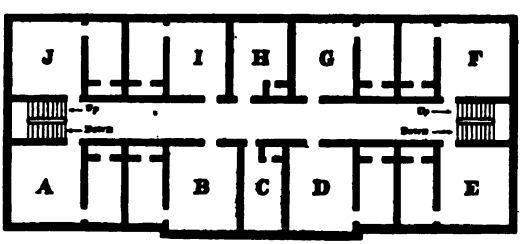
Room rent is in accordance with the following diagrams and prices:—

WEST HALL



FIRST FLOOR		SECOND FLOOR		THIRD FLOOR		FOURTH FLOOR	
A 1	$128	A 5	$160	A 9	$140	A 13	$96
B 2	102	B 6	128	B 10	118	B 14	80
C 3	92	C 7	100	C 11	96	C 15	74
D 4	128	D 8	150	D 12	140	D 16	96
E 17	128	E 21	150	E 25	140	E 29	96
F 18	92	F 22	100	F 26	96	F 30	74
G 19	102	G 23	128	G 27	118	G 31	80
H 20	128	H 24	160	H 28	140	H 32	96

EAST HALL

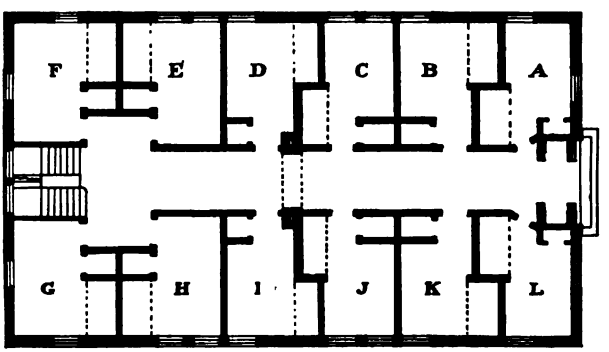


EAST HALL

(See previous page for plan)

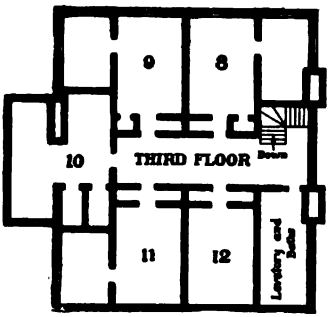
BASEMENT	FIRST FLOOR	SECOND FLOOR	THIRD FLOOR
A	A 6 . . $ 96	A 15 . . $110	A 25 . . $102
B	B 7 . . 92	B 16 . . 110	B 26 . . 100
C	C	C 17 . . $43	C 27 . . $40
D	D 8 . . $92	D 18 . . 110	D 28 . 100
E	E 9 . . 100	E 19 . . 118	E 29 . . 110
F . . 1$60	F 10 . . 100	F 20 . . 110	F 30 . . 100
G 2 . . 55	G 11 . . 80	G 21 . . 86	G 31 . . 80
H 3 . . 30	H 12 . . 40	H 22 . . 43	H 32 . . 40
I 4 . . 55	I 13 . . 80	I 23 . . 86	I 33 . . 80
J 5 . . 60	J 14 . . 86	J 24 . . 90	J 34 . . 86

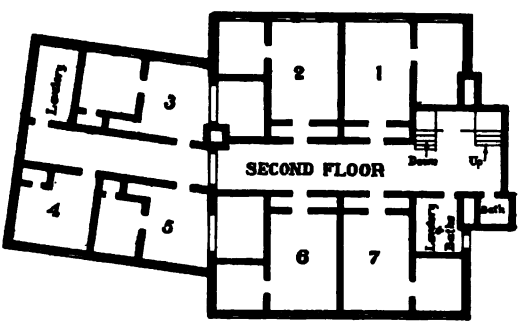
PAIGE HALL



In Paige Hall the plan of each floor is the same. From A to L, the rooms are numbered from 1 to 12 on the first floor; from 13 to 24 on the second, and from 25 to 36 on the third floor. The price for each room is $50.

CURTIS HALL

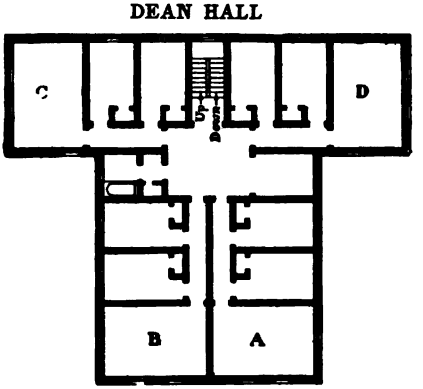




1 . . $80	4 . . $ 50	7 . . $85	10 . . $85
2 . . 80	5 . . 100	8 . . 85	11 . . 85
3 . . 90	6 . . 85	9 . . 85	12 . . 45

Nos. 4 and 12 are single rooms.

DEAN HALL



DEAN HALL

(See previous page for plan)

FIRST FLOOR	SECOND FLOOR	THIRD FLOOR	BASEMENT
A 1 . . $160	A 5 . . $160	A 9 . . $160	A 13 . . $85
B 2 . . 160	B 6 . . 160	B 10 . . 160	B 14 . . 85
C 3 . . 160	C 7 . . 160	C 11 . . 160	C
D 4 . . 160	D 8 . . 160	D 12 . . 160	D

SCHOLARSHIPS

Awards of scholarships are made by the Board of Trustees, on the recommendation of the Faculty. Application for scholarships must be filed with the Secretary on blanks furnished for the purpose, on or before the first day of October; and, if the applicant be a minor, must be sanctioned by his parent or guardian. Grants of aid will apply only for the year in which granted, and will not in themselves be ground for continuance of assistance. If aid is desired during the following year, a new application must be filed.

New students desiring scholarships will be requested to file answers to specific questions on a blank provided for this purpose. This blank must be accompanied by a letter from the principal of the school last attended, containing a statement as to the applicant's character and especially as to his standing as a student. If there appears to be real need and evidence of promise of scholarship, the applicant may be assured of scholarship aid for the first half of the Freshman year, at the rate of $75 per year.

After the first half of the Freshman year, continuance of aid will depend upon the student's need and the grade of his work. Students are required to attain for graduation a grade of at least C in a certain proportion of their work. No student is considered eligible for scholarship aid who has, in the preceding year or term, failed to meet this requirement.

Of those considered eligible for scholarship aid, a limited number of those who are at once highest in scholarship and most in need will be assigned scholarships at the rate of $100 per year. Those who are lowest in scholarship and least in need will be

assigned scholarships at the rate of $50 per year. Others may be assigned scholarships at the rate of $75 per year.

The following conditions must be strictly observed by the applicant:

(a) His expenditure must be moderate, and strictly in accordance with his declaration of limited means.

(b) He must be regular in attendance.

(c) He must be guilty of no behavior reflecting upon his moral character or subversive of good order in the College.

Applicants residing in college dormitories will be given preference over those residing at home.

Scholarships are available for those students only whose term bills are fully paid within ten days after the opening of each college term, or after such bills shall have become due. The bills of any student whose connection with the College ceases are due at that time.

The following scholarships have been founded in the College. Except in special cases, when the donor has otherwise stipulated, the Trustees will award scholarship aid in such sums as they may determine in each case.

THREE STATE SCHOLARSHIPS.—Established in accordance with a resolve of the Commonwealth.

FIVE HOWLAND SCHOLARSHIPS.—Established from the income of the bequest of the late Edwin Howland, of South Africa.

FIVE WALKER MATHEMATICAL SCHOLARSHIPS.—Established in honor of the late William J. Walker, M.D., of Newport, R. I., and payable from the income of the Walker Fund.

TWO MOSES DAY SCHOLARSHIPS.—Founded by the late Moses Day, of Roxbury.

THE A. A. MINER SCHOLARSHIP.—Founded by the late Alonzo Ames Miner, D.D., of Boston.

THE REBECCA T. ROBINSON SCHOLARSHIP.—Founded by the late Charles Robinson, LL.D., of Newton.

THE WILLIAM OSCAR CORNELL SCHOLARSHIP.—Founded by William Oscar Cornell, of Providence, R. I.

THE LAURA A. SCOTT SCHOLARSHIP.—Founded by Mrs. Laura A Scott, of Ridgefield, Conn.

THE STOW SCHOLARSHIP.—Founded by the late Mrs. Eugenia D. Stow, of Meriden, Conn.

THE NORCROSS SCHOLARSHIP.—Founded by James A. and Mrs. Mary E. Norcross, of Worcester.

THE ANDERSON SCHOLARSHIP.—Founded by John M. Anderson, of Salem, in the name of John M. and Rebecca Anderson.

THE TRAVELLI SCHOLARSHIP.—Founded by Mrs. Emma R. Travelli of Newton.

THE WHITTIER SCHOLARSHIP.—Founded by the late Charles Whittier, of Roxbury, in the name of Charles and Eliza Isabel Whittier.

THE TALBOT SCHOLARSHIP.—Founded by the late Newton Talbot, of Boston.

THE SIMONS MEMORIAL SCHOLARSHIP.—Founded by Mrs. Mary A. Simons, of Manchester, N. H., in memory of Hiram H., Augustus, and Frank Simons.

THE AMASA AND HANNAH L. WHITING SCHOLARSHIP.—Founded by the late Mrs. Hannah L. Whiting, of Hingham.

THE MARTHA GOLDTHWAITE MEMORIAL SCHOLARSHIP.—Founded by the late Willard Goldthwaite, of Salem.

THE ANDREW J. CLARK MEMORIAL SCHOLARSHIP.—Founded by Mrs. Abbie B. Clark, of Orange.

THE SARAH E. SAYLES MEMORIAL SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE COUSENS SCHOLARSHIP.—Founded by the late John E. Cousens, of Brookline, in the name of John E. and Sarah C. Cousens.

THE BENJAMIN F. SPINNEY SCHOLARSHIP.—Founded by Benjamin F. Spinney, of Lynn.

THE HENRY F. BARROWS SCHOLARSHIP.—Founded by Henry F. Barrows, of North Attleboro.

THE ELLERY E. PECK MEMORIAL SCHOLARSHIP.—Founded by the late Henry Rollins, of Bangor, Me.

THE J. H. MORLEY MEMORIAL SCHOLARSHIP.—Founded by Herbert Small Morley, of Templeton.

THE EDWIN H. CHAPIN MEMORIAL SCHOLARSHIP.—Founded by friends of the late Edwin Hubbell Chapin, D.D., in New York City.

THE THOMAS A. GODDARD MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HOSEA BALLOU, 2D, MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HENRY E. COBB SCHOLARSHIP.—Founded by the late Henry E. Cobb, of Boston.

THE MARY ANN WARD SCHOLARSHIP.—Founded by Sylvester L. Ward, of Boston.

THE MARIA P. WINN SCHOLARSHIP.—Established from a bequest of the late Mrs. Maria P. Winn, of Woburn.

THE JOSEPH D. PEIRCE MEMORIAL SCHOLARSHIP.—Founded by the children and other relatives of the late J. D. Peirce, D.D., of Attleboro.

TWO SIMMONS SCHOLARSHIPS.—Founded by the will of Robert F. Simmons, of Attleboro, in the name of Mary F. and Robert F. Simmons.

THE JOSHUA S. AND HARRIET N. WHITE SCHOLARSHIP.—Founded by the late Joshua S. White, of Pawtucket, R. I.

THE JOHN B. PERKINS SCHOLARSHIP. — Founded by Ann Maria Perkins, of Medford.

THREE BARNARD SCHOLARSHIPS.—Founded by the late Mrs. Caroline M. Barnard, of Everett.

THE RICHARD PERRY BUSH SCHOLARSHIP.—Founded by the late Mrs. Caroline M. Barnard, of Everett.

THE BARTLETT SCHOLARSHIP.—Founded by the late Mrs. Nancy Bartlett, of Milford.

THE B. H. DAVIS SCHOLARSHIP.—Founded by the Rev. B. H. Davis, of Weymouth, for the benefit of students of the College of Letters who are preparing to enter the Christian ministry.

THE LATIMER W. BALLOU SCHOLARSHIP.—Founded by the late Latimer W. Ballou, of Woonsocket, R. I.

THE NATHANIEL WHITE SCHOLARSHIP.—Founded by Armenia S. White, of Concord, N. H.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

THE RHODE ISLAND SCHOLARSHIP.—Founded by several persons in Rhode Island.

TWO CHARLES AND FANNIE A. MINER BOOTH SCHOLARSHIPS.—Founded by the late Charles Booth, of Springfield, Vermont.

THE LUTHER GILBERT SCHOLARSHIP.—Founded by the late Mrs. Luther Gilbert, of Roxbury.

THE ORMSBEE CLASS SCHOLARSHIP.—Founded by Benjamin F. Smith, of Pawtucket, R. I.

THE JAMES M. AND EMILY COOK SCHOLARSHIP.—Founded by Henrietta J. States, of Boston.

THE WILLIAM H. SHERMAN SCHOLARSHIP.—Founded by the late William H. Sherman, of Cambridge.

THE DAVIS COOK SCHOLARSHIP.—Founded by the late Davis Cook, of Cumberland, R. I.

THE AUSTIN B. FLETCHER SCHOLARSHIP.—Founded by Austin Barclay Fletcher, of New York City.

THE JONAS CLARK WELLINGTON SCHOLARSHIP.—Founded by Mrs. Sarah C. Fisher Wellington, of Cambridge.

THE MARY L. GROCE SCHOLARSHIP.—Founded by the late Mary L. Groce, of Roxbury.

THE JOHN MURRAY SPRAGUE AND ELIZA FLETCHER SPRAGUE SCHOLARSHIP.—Founded by the late John Sprague, of Lowell.

THE MARY A. RICHARDSON SCHOLARSHIP.—Founded by the late Mrs. Mary A. Richardson, of Worcester.

TWO WARREN SCHOLARSHIPS.—Founded by the late Dr. Ira Warren, of Boston.

TRUSTEE SCHOLARSHIPS.—A limited number of special scholarships of one hundred dollars each are available for needy students in the School of Liberal Arts who reside in college dormitories.

The following scholarships of fifty dollars each are awarded annually:—

THE A. A. MINER SCHOLARSHIP.—Founded by the late Alonzo Ames Miner, D.D., of Boston.

THE PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of New Rochelle, N. Y.

THE MOSES DAY SCHOLARSHIP.—Founded by the late Moses Day, of Roxbury.

THE JOSEPH H. WALKER SCHOLARSHIP.—Founded by Joseph H Walker, of Worcester.

THE GEORGE C. THOMAS SCHOLARSHIP.—Founded by George C. Thomas, of Philadelphia, Pa.

THE ALBERT W. SAYLES SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

THE CHARLES A. AND CORNELIA B. SKINNER SCHOLARSHIP.—Founded by the late Rev. Charles A. Skinner, D.D., and Mrs. Cornelia B. Skinner, of Cambridge, Mass.

THE GEORGE STEVENS BALLARD SCHOLARSHIP.—Founded by the late Caroline D. M. Ballard, of Augusta, Me.

The following scholarships are awarded under special conditions:—

THE GREENWOOD PRIZE SCHOLARSHIP IN ORATORY.—Founded by the late Mrs. Eliza M. Greenwood, of Malden, and given to such student as shall have made, as the result of faithful work, together with at least a fair degree of attainment, the greatest improvement in Oratory.

THE WENDELL PHILLIPS MEMORIAL SCHOLARSHIP.—Founded to perpetuate the name, fame, and influence of Wendell Phillips. This scholarship is to be awarded to a student who has completed the Freshman and Sophomore years, and he is to have the benefit of it during the remainder of his course. The beneficiary must be of sound body, high

character, and ability in declamation and debate, and must comply with certain special conditions, including participation in a competitive debate of the applicants at the end of the Sophomore year. The specific conditions governing the award of this scholarship may be obtained by those intending to apply therefor from the Secretary of the Faculty, to whom application should be made early in the Sophomore year. The income of this scholarship is at present seventy dollars.

THE MOSES TRUE BROWN SCHOLARSHIP.—A scholarship yielding fifty dollars annually, founded by the late Moses True Brown, of Sandusky, Ohio, formerly Professor of Oratory in Tufts College, for encouraging and assisting worthy students in the department of Oratory.

THE PRIZE SCHOLARSHIP OF THE CLASS OF 1898.—The sum of fifty dollars is given annually by the Class of 1898 to that Senior who at the end of the Junior year shall have maintained the highest excellence in a course of study broadly and wisely chosen.

THE PRIZE SCHOLARSHIP OF THE CLASS OF 1882. — The sum of one hundred dollars is given annually by the class of 1882 to that member of the College who best exemplifies the combination of ability in athletics and excellence in scholarship.

PRIZES

GODDARD PRIZES.— Three prizes of fifteen dollars each are assigned annually from the Goddard Prize Fund. In 1911–12 these prizes will be awarded in the departments of French, Economics and Chemistry, under the following conditions:

FRENCH.—A prize for the best final examination in French 3.

ECONOMICS AND SOCIOLOGY.—A prize for the best essay by any student in the department of Economics on a subject to be approved by the head of the department.

CHEMISTRY.—A prize for that member of the class beginning General Inorganic Chemistry who, during the year, becomes most proficient in the subject.

RHETORICAL PRIZES.—Three prizes are awarded as follows:—

A first prize of forty dollars, a second prize of thirty dollars, and a third prize of twenty dollars. The preliminary competition will be open to all candidates for the degree of A.B., B.S., and B.D.

The rhetorical prizes are awarded by a committee, chosen by the Faculty, who judge the work presented by the competitors upon the public day appointed for that purpose. In order to enter the public competition, candidates, as well as their

selections, must be approved by the Professor of Oratory. A preliminary competition is held about ten days before the competition announced in the calendar, at which a committee of the Faculty determine the contestants in the final and public readings.

The foregoing prizes are not awarded, unless in the opinion of the respective judges there is sufficient merit in the several contests to warrant their distribution.

THE CHARLES L. CORBIN PRIZE of fifty dollars for a thesis in Metaphysics, founded by Professor and Mrs. Cushman. Open to students who, having elected Philosophy as a major subject, announce on the first day of October of their senior year the subject of their thesis, and have the thesis completed on April first of that year. The prize may be awarded even if only one student competes for it. It may be withheld if among a large number of theses no one is deemed adequate. The committee of award will be chosen by Professor Cushman from the philosophical faculty of some other institution.

THE DE WITT C. TOMLINSON PRIZE SCHOLARSHIPS.—Founded by Rev. Irving C. Tomlinson, of Brookline, Mass.

Two prizes of thirty and twenty dollars respectively, for the two best essays on the subject of "The Ministry of Christ Jesus." The award of prizes must take into account (1) literary merit; (2) evidence of thorough study, clear insight, and unbiased understanding of the Biblical records of the ministry of Christ Jesus; (3) the treatment of the public and private ministration to those of his own time; (4) the treatment of the universal application of his ministry to all human needs, and (5) the treatment of the means by which the benefits of his ministry may be appropriated by his followers.

These prizes are open to Seniors in The School of Liberal Arts, the Engineering School, the Theological School, and Jackson College, and to members of the Graduate School. Details as to conditions of competition may be obtained at the Secretary's office.

A regular day has been appointed for the annual announcement of the award of prizes and the assignment of Commencement parts,— Wednesday of the week preceding the Thanksgiving recess.

COMMITTEE ON STUDENT EMPLOYMENT

It is the object of the committee on student employment to inform students concerning positions which may give regular occupation during available hours of term time, or which may be temporarily filled during the vacation periods. Students who wish to make application for any occupation should register their names, with a statement of their qualifications for any special work, with PROF. HARRY G. CHASE, Chairman of the Employment Committee, Room 22, Robinson Hall.

Buildings and Equipment

The College buildings are twenty in number. Ballou Hall contains recitation-rooms, and the offices of the President, the Dean, the Registrar, and the Bursar. It contains also the college bookstore. Other buildings are Barnum Museum; Goddard Chapel; Goddard Gymnasium; the Eaton Library; the Chemical Building; Jackson Gymnasium; three dormitories,—East Hall, West Hall, Dean Hall, for men; Curtis Hall, containing the post-office, class-rooms, and rooms for students; Metcalf Hall, and Start and Richardson Houses, for students of Jackson College. The Bromfield-Pearson School building is available for technical courses of the College. Two buildings, Packard Hall and Paige Hall, are devoted to the use of the Theological School. Robinson Hall provides for work in certain of the physical sciences. A power-house has been added, which supplies light, heat, and power to the engineering buildings.

The new library building, erected through the gift of one hundred thousand dollars by Mr. Andrew Carnegie, is now occupied. At the suggestion of Mrs. Carnegie it is called the Eaton Memorial Hall, in honor of Charles Henry Eaton,'74, former pastor of the Church of the Divine Paternity, New York City.

In the summer the gates in the wire fence surrounding the buildings are closed at 5 P.M. on week days and all day Sunday.

EATON LIBRARY

In all, about sixty-six thousand bound volumes and fifty thousand pamphlets are available for use. The College regularly receives more than two hundred periodicals. By favor of the late Senator Hoar the library is a depository for government publications. In the library building a reading-room, maintained by the students, supplies the daily and weekly papers. The student fund also provides a number of the popular and the more technical magazines. Separate rooms have been provided with facilities for the use of students working in the departments of History and Public Law, the Ancient Lan-

guages, the Modern Languages, Music, English, the Fine Arts, Philosophy, Political Science, Physics and Mathematics. The average annual increase by donation and purchase, for the last five years, has been about two thousand six hundred volumes.

In the general library is the collection of the Universalist Historical Society (six thousand volumes and several thousand pamphlets), to which, on application, students have free access. In Packard Hall is a selected reference library, for the use of theological students. In the Barnum Museum is the department library of Natural History, numbering more than thirty-three hundred volumes and over eight thousand pamphlets. The Metcalf Musical Library is divided between the music rooms in Goddard Gymnasium, where the scores are kept, and the department room in the Eaton Memorial Library, which contains the collection of English works relating to music. About four hundred representative musical compositions, in form for use upon the automatic instruments in the music rooms, are available to students.

The library is open to all members of the College every day in the week, except Sunday, from 8.00 A.M. to 5.30 P.M.

BARNUM MUSEUM

The Barnum Museum of Natural History was built in 1883–84 by the late Phineas T. Barnum, who gave the College a fund for its maintenance and for the addition of two wings to the central building. One of these wings has been erected. In addition to laboratory rooms, it affords space for the display of the mineralogical and geological collections.

The College is also indebted to Mr. Barnum for the larger portion of its zoological collection. This serves to illustrate all groups of the animal kingdom, and is especially rich in skeletons and mounted skins of mammals, the whole being well adapted for the purposes of instruction. The botanical collection consists of an herbarium containing a representation of the flora of New England, besides many specimens from Europe and the southern and western States. The geological collection contains representatives of the various types of rocks, as well

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as of fossils from all formations. The mineralogical collection embraces fine examples of most of the species.

The laboratories and lecture-rooms of the department of Geology are in the main Museum building. The geological laboratory is provided with petrological microscopes, instruments for making rock sections, and other instruments. The mineralogical laboratory possesses the apparatus necessary for the determination of minerals, the analysis of ores, and assay work. The biological laboratories are in the main building and in the newly-erected wing. The laboratories for elementary work are furnished with all necessary facilities, while the laboratory for advanced and research work has all the appliances needed for investigation on the lines of anatomy, histology, and embryology.

The Barnum Museum is open for the inspection of visitors from 8.30 A.M., to 5.00 P.M., every day except Sundays and legal holidays.

GODDARD GYMNASIUM

Goddard Gymnasium, the gift of Mrs. Mary T. Goddard, is well adapted to provide the prescribed class and individual work, and to furnish wholesome physical exercise for all. It is fitted with the apparatus usually seen in a good modern gymnasium, including facilities for light and heavy gymnastics, fencing, wrestling, basket ball, base ball, and the many indoor athletic sports. In the offices is a full set of anthropometric instruments for the physical examination of all students. There is a large gallery, with padded running track twenty-four laps to the mile. The dressing rooms, lockers, and baths are well lighted and commodious. The building is heated by steam and lighted by electricity.

The third floor is occupied by the department of Music.

ATHLETIC FIELDS

The old campus is just outside the gymnasium, and on it are tennis-courts, two base-ball diamonds, a foot-ball field, and a board track. Its close proximity to the Gymnasium is of great advantage.

Tufts College Athletic Field is the large inclosed field on

College Avenue, where inter-collegiate contests are played. It includes two base-ball diamonds, a foot-ball field, and a quarter-mile, twenty-foot cinder track, for track athletics. Tennis-courts and a separate gymnasium are provided for women students, not far from Metcalf Hall.

While athletics are encouraged and generously supported by the College, they are made subsidiary to the requirements of the curriculum, thus safeguarding the best interests of the student.

CHEMICAL BUILDING

The building of the department of Chemistry contains laboratories for general inorganic, organic, analytical, and metallurgical chemistry, a large lecture-room, library, and weighing room, and the private laboratories of the professors in charge. The rooms are provided with modern laboratory conveniences, and are well supplied with apparatus and chemicals.

ROBINSON HALL

Robinson Hall is a memorial to the late Charles Robinson, and is designed for the use of the Engineering School. It contains the physical and engineering laboratories, a lecture hall, reception rooms, and offices of instructors. It is lighted throughout by gas and electricity, and heated from an adjoining steam plant by direct and indirect methods.

The Laboratory of General Physics has a floor area of about twenty-five hundred square feet. It is provided with the necessary apparatus for quantitative work in mechanics, sound, light, heat, electricity and magnetism.

The Electrical Testing Laboratories are well equipped for general electric testing. The apparatus includes various makes of ammeters, voltmetters, wattmeters, galvanometers, resistance boxes, bridges, condensers, and standards of resistance, capacity and electromotive force. A storage battery supplies direct current at any pressure from two to one hundred and twenty volts, and in addition the testing rooms receive both direct and alternating currents from the Power House, and alternating current from the Edison Electric Illuminating Company.

SCHOOL OF LIBERAL ARTS

Faculty

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT

FRANK G. WREN, A.M., DEAN
Walker Professor of Mathematics

PHILIP M. HAYDEN, A.B., SECRETARY
Professor of French

EDWIN C. BOLLES, A.M., PH.D., D.D., LL.D.
Dickson Professor of English and American History

CHARLES E. FAY, A.M., LITT.D.
Wade Professor of Modern Languages

WILLIAM G. TOUSEY, A.M., S.T.D.
Professor of Logic and Ethics

J. STERLING KINGSLEY, Sc.D.
Professor of Biology

RICHARD JONES, PH.D.
Professor of English Literature

ALFRED C. LANE. A.M., PH.D.
Pearson Professor of Geology and Mineralogy

HERBERT E. CUSHMAN, A.M., PH.D.
Professor of Philosophy

LEO R. LEWIS, A.M.
Professor of the History and Theory of Music

FRANK W. DURKEE, A.M.
Professor of Inorganic Chemistry

WILLIAM K. DENISON, A.M.
Professor of the Latin Language and Literature

HARRY G. CHASE, B.S.
Professor of Physics

LAWRENCE B. EVANS, PH.D.*
Professor of History

*Absent on leave.

HERBERT Z. KIP, PH.D.
Instructor in English

FRED D. LAMBERT, A.M., PH.D.
Assistant Professor of Biology

HENRY C. METCALF, PH.D.
Jackson Professor of Political Science

KARL SCHMIDT, A.M., PH.D.
Lecturer in Philosophy

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

THOMAS WHITTEMORE, A.B.*
Professor of English, and Instructor in the History of Art

LUCIUS M. BRISTOL, A.M., S.T.B.
Instructor in Sociology and Applied Christianity

WILLIAM R. RANSOM, A.M.
Professor of Mathematics

WILLIAM H. REED, JR., A.M.
Assistant Professor of Modern Languages

MILLEDGE L. BONHAM, PH.D.
Instructor in History

ALBERT H. GILMER, A.M.
Instructor in English

ARTHUR I. ANDREWS, PH.D.
Associate Professor of History

ERNEST R. GREENE, A.M.
Instructor in Romance Languages

PHILIP H. COBB, PH.D.
Assistant Professor of Physical and Organic Chemistry

LEONARD S. BLAKEY, B.S.
Instructor in Economics and Statistics

JAMES E. SHRADER, A.M.
Instructor in Physics

* Absent on leave.

NATHANIEL H. KNIGHT, B.S.
Assistant in Physics

ARMAN E. BECKER, A.M.
Assistant in Physics

CROSBY F. BAKER, M.S.
Instructor in Chemistry

HUBERT E. BRAY, A.B.
Walker Special Instructor in Mathematics

OSCAR MARTIN, M.D.
Instructor in Physical Training

Standing Committees

PROMOTIONS: Dean Wren, *Chairman;* Professors Durkee, ———, Denison, and Reed.

CURRICULUM: Dean Wren, *Chairman;* Professors Fay, Denison, Metcalf, and Durkee.

Requirements for Graduation *

Students may enter upon their work in the courses of liberal arts as candidates for the degree of Bachelor of Arts, or Bachelor of Science. In every case the ground of promotion and of graduation is the intellectual attainment of the individual student, not a fixed requirement of a certain number of years of study. Students determine the general direction of their work by their choice of course. They are thereby brought into personal advisory relations with their respective major instructors, under whose guidance they arrange their programs with reference to their individual needs and aims. All work actually accomplished by the student in regular standing counts toward the attainment of the degree.

SYNOPSIS OF THE REQUIREMENTS FOR GRADUATION †

(1) The requirement for the degree of Bachelor of Arts or Bachelor of Science is the satisfactory completion of subjects aggregating one hundred and twenty-two term hours, including physical training.‡

(2) Students are required to attain for graduation a grade of at least C in seventy-two term hours.§

(3) Upon the satisfactory completion of the aggregate requirement, the student is entitled to receive the Bachelor's degree, but no student will be granted a degree in less than four years of residence, unless he shall have obtained grade B as an average for his entire work.

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* For the requirements for B.S., see also the announcement of the Engineering School; for B.D., see the announcement of the Crane Theological School.

† Each department offers a series of subjects for study. The unit indicating the requirements is the *term hour*, which represents a subject pursued one hour a week for one half-year. Thus a subject calling for three hours a week for one term represents a requirement of three term hours; if it calls for three hours a week for one year, or two terms, the requirement in that subject is six term hours.

‡ An acceptable Commencement part counts as an elective in the second half of the Senior year.

§ For the meaning of grade C, see "Grades of Scholarship" under "General Information."

Courses of Instruction

The courses offered to students in the School of Liberal Arts are as follows:

I. A general course, largely elective, leading to the degree of Bachelor of Arts.

II. A General Science Course, and a Chemistry Course, largely prescribed, leading to the degree of Bachelor of Science.

III. Eight courses arranged for students proposing to prepare for advanced study in certain lines, or to enter upon certain occupations. These courses lead to the degree of Bachelor of Arts for students who present an advanced ancient language for admission, and who choose their electives so as to fulfil the requirements for that degree; others satisfactorily completing any one of these courses receive the degree of Bachelor of Science.

I. GENERAL COURSE LEADING TO THE DEGREE OF BACHELOR OF ARTS

The plan of study aims to furnish, in its prescribed subjects, the essentials of a liberal education, and at the same time a large opportunity for election.

The following subjects are prescribed: —

	Term Hours
Languages (Latin, Greek, French, German: each student to take *three*)	18
English	6
Mathematics	6
Physical Science (Physics, Chemistry, Biology: each student to take *one, or two*)	12
Mental and Moral Science (of the three departments, Philosophy, Political Science, and History and Public Law, each student must take work in *at least two*)	12
Physical Training	2
A total of	56

The requirements are by groups, not by special subjects, and in each group except English and Physical Training some choice is allowed the student.

A normal Freshman program includes English, Mathematics, an ancient language, a second foreign language, and a physical science, together with Physical Training. All Freshman programs are subject to the approval of the Committee on Promotions.

At the end of the first year the student is required to choose a major department in which he must complete, before graduation, work amounting to eighteen term hours. He may offer work already done in that subject in some one of the prescribed groups as a part of the eighteen hours which he is required to give to his major department, but no subject indicated in the catalogue as elementary can be counted in such work.

The student shall further complete eighteen term hours in subjects approved as collateral with his major subject; that is, subjects tending to strengthen and to assist his work in his major.

The remaining term hours of the required aggregate are to be made up by the election of the student from the various subjects offered, limited only by special restrictions applied to certain subjects.

II. COURSES IN GENERAL SCIENCE AND CHEMISTRY

General Science

The course in General Science is designed to prepare students for positions as teachers of Science in the secondary schools, or for graduate work in Physics, Chemistry, or Biology.

FRESHMAN YEAR

First Term		Second Term	
English 1	3	English 2	3
Mathematics 3	3	Mathematics 1	3
German or French	3	German or French	3
Physics 1	3	Physics 1	3
Chemistry 1	3	Chemistry 1	3

SOPHOMORE YEAR

First Term		Second Term	
Biology 2 or 3	3	Biology 2 or 3	3
Chemistry 35-2	2	Chemistry 35-3	2
Physical Laboratory 31-4	3	Physical Laboratory 31-4	3
Mathematics 4	3	Physics 31-3	3
French or German	3	Mathematics 5	3
		French or German	3

JUNIOR YEAR

First Term		Second Term	
Biology 3 or 2	3	Biology 3 or 2	3
Chemistry 4	3	Chemistry 4	3
Geology 21	1	Physics 2	3
Geology 22	2	Geology 23	1
Political Science 1 or History 1	3	Geology 24	2
		Political Science 1 or History 1	3
Electives		*Electives*	
Physics		Physics	
Chemistry		Chemistry	
Biology		Biology	
Mathematics		Mathematics	
Modern Language		Modern Language	

SENIOR YEAR

First Term		Second Term	
Biology 7	3	Biology 7	3
Chemistry 11	3	Chemistry 11	3
History 1 or Political Science 1	3	History 1 or Political Science 1	3
Drawing 21-1	5		
Electives		*Electives*	
Physics		Physics	
Chemistry		Chemistry	
Biology		Biology	
Steam Engine		Steam Engine	
Mechanic Arts		Mechanic Arts	
History or Political Science		History or Political Science	
Modern Language		Modern Language	

CHEMISTRY

Students who wish to specialize in Chemistry are advised to take the B.S. course in Chemistry. The subjects have been selected and arranged to prepare students for positions in metallurgical laboratories, as chemists with manufacturers or in analytical laboratories, or as assistant chemists for immediate service in the various departments of the United States government. It may also be followed by those who wish to teach or to do graduate work in Chemistry.

FRESHMAN YEAR

First Term		Second Term	
English 1	3	English 2	
Mathematics 3	3	Mathematics 1 or 2	3
Physics 1	3	Physics 1	3
German	3	German	3
Chemistry 1	3	Chemistry 1	3

SOPHOMORE YEAR

First Term		Second Term	
German	3	German	3
Chemistry 35-2	2	Chemistry 35-3	2
Chemistry 4	3	Chemistry 4	3
Physical Laboratory 31-14	3	Physics 2	3
Electives		*Electives*	
Mathematics		Mathematics	
English		English	
Drawing			

JUNIOR YEAR

First Term		Second Term	
Chemistry 5	3	Chemistry 5	3
Chemistry 9	1	Chemistry 7	2
Chemistry 35-10	4	Chemistry 35-10	4
Political Science 1	3	Political Science 1	
Mineralogy 1	3		
Electives		*Electives*	
German		German	
English		English	
Mathematics		Mathematics	
History 1		History 1	
Electrical Laboratory		Electrical Laboratory	
		Crystallography	

SENIOR YEAR

First Term		Second Term	
Chemistry 11	3	Chemistry 11	3
Chemistry 17	3	Chemistry 17	3
Thesis	3	Thesis	3
Geology 21	1	Geology 23	1
Geology 22	2	Geology 24	2
		Chemistry 8	2
Electives		*Electives*	
Biology		Biology	
Chemistry 12		Chemistry 12	
Political Science		Political Science	
Dynamo-Electric Machinery			

III. SPECIALIZED COURSES LEADING TO THE DEGREE OF BACHELOR OF ARTS OR BACHELOR OF SCIENCE

The following courses have been arranged for students who desire to begin preparation for a definite vocation. They are designed to give at the same time as much of the general training which every educated man should have as is consistent with their special purpose, and are intended to be followed by more definitely specialized training in a graduate school or in practical experience. Those who have presented an advanced ancient language for admission and choose their electives so as to fulfil the requirements of the A.B. degree, will receive that degree. Others satisfactorily completing the subjects indicated in one of these courses will receive the degree of B.S. The studies of the Freshman year are alike for all courses, so that a definite choice need not usually be made before the end of the first year.

FRESHMAN YEAR

[Alike for all the following courses]

First Term		Second Term	
English 1	3	English 2	3
Mathematics 3	3	Mathematics 1 or 2	3
Natural Science	3	Natural Science	3
Two Foreign Languages, ancient or modern	6	Two Foreign Languages, ancient or modern	6

Note: Students intending to enter the Medical Preparatory Course should take Chemistry 1 as the Natural Science in this year.

BUSINESS

The need of systematic training of students contemplating a business career arises from the differentiation, specialization, and increasing complexity of modern business relations. This course is in no sense intended as a substitute for experience; but it should impart organized knowledge, broaden the outlook, and train the student to analyze and to appreciate new situations as they arise.

SOPHOMORE YEAR

First Term		Second Term	
Foreign Lang., ancient or modern	3	Foreign Lang., ancient or modern	3
Natural Science	3	Natural Science	3
History 1	3	History 1	3
Political Science 1	3	Political Science 1	3
Elective	3	Elective	3

JUNIOR YEAR

First Term		Second Term	
Political Science 2 or 22	3	Political Science 3	3
Political Science 6	3	Political Science 16	3
Philosophy 3	3	Philosophy 4	3
Law 1 or 5	3	Elective	6
Elective	3		

SENIOR YEAR

First Term		Second Term	
Political Science 17	3	Philosophy 55	3
Political Science 14	3	Elective	12
Philosophy 55	3		
Law 5 or 1	3		
Elective	3		

DIPLOMATIC AND CONSULAR SERVICE

For all except the highest posts in the diplomatic and consular service, appointees are now required to prove their fitness by examination. The following course, which emphasizes the study of Language, History, and Public Law, is designed to meet the requirements prescribed by the Department of State.

SOPHOMORE YEAR

First Term		Second Term	
Foreign Lang., ancient or modern	3	Foreign Lang., ancient or modern	3
Natural Science	3	Natural Science	3
History 1	3	History 1	3
Political Science 1	3	Political Science 1	3
Elective	3	Elective	3

JUNIOR YEAR

First Term		Second Term	
History 19 (or alternate)	3	History 20 (or alternate)	3
Law 1 (or alternate)	3	Law 2 (or alternate)	3
Philosophy 3 or Political Science 22	3	French 3B or German 3B	3
French 3B or German 3B	3	Elective	6
Elective	3		

SENIOR YEAR

First Term		Second Term	
History 4 or 6	3	History 7 or 8	3
Political Science or Philosophy 3	3	Law 7 (or alternate)	3
Law 5 (or alternate)	3	History 15	3
History 15	3	Elective	6
Elective	3		

FORESTRY PREPARATORY

The Forestry Preparatory Course is intended to fit students to enter the best Forestry schools, and includes the subjects which are necessary to meet the requirements of those institutions. Within the last few years Forestry has become one of the most important professions, and the demand for trained foresters is greater than the supply.

SOPHOMORE YEAR

First Term		Second Term	
Foreign Lang., ancient or modern	3	Foreign Lang., ancient or modern	3
Chemistry 1	3	Chemistry 1	3
Physical Laboratory 31-14	3	Physics 2	3
Biology 2 or 3	3	Biology 2 or 3	3
History	3	History	3

JUNIOR YEAR

First Term		Second Term	
Chemistry 2	4	Chemistry 3	2
Biology 3 or 2	3	Biology 3 or 2	3
Drawing 21-1	5	Surveying 41-1	2
Surveying 41-1	1	Political Science 1	3
Political Science 1	3	Elective	9

SENIOR YEAR

First Term		Second Term	
Geology 21	1	Geology 23	1
Geology 22	2	Geology 24	2
Biology 7	3	Biology 7	3
Elective	9	Hydraulics 41-43	3
		Highways 41-21	3
		Dynamo-Electric Machinery 61-3	2
		Elective	2

JOURNALISM

This course, designed for students who intend to adopt Journalism as a profession, is not intended as a substitute for

experience. It aims to give the general education which is essential for work in this profession, placing emphasis on subjects which give an understanding of the life of to-day, and those which develop the power of accurate and fluent expression.

SOPHOMORE YEAR

First Term		Second Term	
Foreign Lang., ancient or modern	3	Foreign Lang., ancient or modern	3
English 11	3	English 11	3
Natural Science	3	Natural Science	3
History 1	3	History 1	3
Political Science 1	3	Political Science 1	3

JUNIOR YEAR

First Term		Second Term	
History 3	3	History 3	3
English 17, 24, or 34	3	English 18, 36, or 34	3
Philosophy 3	3	Political Science 16	3
History 4 (or alternate)	3	History 5 (or alternate)	3
Elective	3	Elective	3

SENIOR YEAR

First Term		Second Term	
Philosophy 6	3	Philosophy 7	3
Law (1 or 5)	3	Philosophy 55	3
Political Science 6	3	Elective	9
Philosophy 55	3		
Elective	3		

Law Preparatory

The following course, which is arranged especially for students who are preparing to enter a law school, emphasizes the study of History, English, Economics, and Public Law. Among the more technical courses in Public Law, students may elect subjects which will enable them to test their fitness for the legal profession.

SOPHOMORE YEAR

First Term		Second Term	
Foreign Lang., ancient or modern	3	Foreign Lang., ancient or modern	3
Natural Science	3	Natural Science	3
History 1	3	History 1	3
Philosophy 1	3	Philosophy 2	3
Elective (English or Pol. Science)	3	Elective (English or Pol. Science)	3

JUNIOR YEAR

First Term		Second Term	
History 2 or 6	3	History 2 or 7	3
Law 1 (or alternate)	3	Philosophy 4	3
Philosophy 3	3	Law 2 (or alternate)	3
Elective	6	Elective	6

SENIOR YEAR

First Term		Second Term	
History 6 or 2	3	History 7 or 2	3
Law 5 (or alternate)	3	History 15	3
History 15	3	Law 9 (or alternate)	3
Elective	6	Elective	6

MEDICAL PREPARATORY

The Medical Preparatory Course is intended to fit students for any medical school in the United States. The studies included are all of immediate importance in the professional training, and those of the fourth year, taken in the Tufts Medical School, complete the first year of the distinctively medical course. In this way it is possible to obtain the bachelor's and the doctor's degree in seven years.

SOPHOMORE YEAR

FIRST TERM		SECOND TERM	
Foreign Lang., ancient or modern	3	Foreign Lang., ancient or modern	3
Physics 1	3	Physics 1	3
Chemistry 35-2	2	Chemistry 35-3	2
Biology 2 or 3	3	Biology 2 or 3	3
History	3	History	3

JUNIOR YEAR

FIRST TERM		SECOND TERM	
Physical Laboratory 31-14	3	Physics 2	3
Biology 3 or 2	3	Biology 3 or 2	3
Chemistry 10	4	Chemistry 10	4
Philosophy 55	3	Philosophy 55	3
Elective	3	Elective	3

SENIOR YEAR

Corresponds to the first year of the Medical Course
(In Tufts Medical School, Boston)

ORGANIZED PHILANTHROPY

The following course in Organized Philanthropy has been arranged to fit the student for professional and volunteer social work, or to enter the professional schools which have lately been established in this field.

SOPHOMORE YEAR

FIRST TERM		SECOND TERM	
German	3	German	3
Chemistry or Biology	3	Chemistry or Biology	3
History 1	3	History 1	3
Political Science 1	3	Political Science 1	3
Philosophy 1	3	Philosophy 2	3

JUNIOR YEAR

FIRST TERM		SECOND TERM	
Political Science 2 or 22	3	Political Science 15	3
Political Science 6	3	Political Science 16	3
Political Science 17	3	Law 2 or 7	3
Law 1 or 5	3	Elective	6
Elective	3		

SENIOR YEAR

FIRST TERM		SECOND TERM	
Law 5 or 1	3	Law 7 or 2	3
Philosophy 6	3	Philosophy 7	3
Political Science 4	3	Political Science 5	3
Political Science 3	3	Political Science 13	3
Elective	3	Elective	3

TEACHING

This course is designed to give a broad training, with a reasonable opportunity for specialization, and to include in particular the subjects now required of teachers in many of the larger cities. Students intending to teach Language are advised to take Latin in the Freshman year, on account of its fundamental value in the study of other languages.

The attention of students intending to teach Science is called to the course in General Science.

SOPHOMORE YEAR

FIRST TERM		SECOND TERM	
Philosophy 1	3	Philosophy 2	3
History 1	3	History 1	3
Natural Science	3	Natural Science	3
Foreign Lang., ancient or modern	3	Foreign Lang., ancient or modern	3
Major Work	3	Major Work	3

JUNIOR YEAR

FIRST TERM		SECOND TERM	
Philosophy 55	3	Philosophy 55	3
Music 9 or 1	3	Music 10 or 21	3
Major and Elective Work	9	Major and Elective Work	9

SENIOR YEAR

FIRST TERM		SECOND TERM	
Education 1	3	Education 2	3
Major and Elective Work	12	Major and Elective Work	12

Departments of Instruction

MAJOR DEPARTMENTS

Any of the following may be chosen as major departments

ENGLISH	POLITICAL SCIENCE
GERMAN	MATHEMATICS
FRENCH	PHYSICS
LATIN	CHEMISTRY
GREEK	BIOLOGY
PHILOSOPHY	
HISTORY AND PUBLIC LAW	

In the subjoined statement of the subjects offered in the different departments, the name of the major instructor is that given at the head of each department that offers major work. In other cases the name is given of the instructor in general charge of the department. When two or more names appear, major students will be guided by the usage of the department. Names of instructors in charge of each subject are appended to the brief statement of the subject itself.

Subjects that continue through only one half-year are indicated by letters in parenthesis: thus (F) means "first half-year," (S) means "second half-year." Subjects not so indicated extend through both terms.

Unless otherwise indicated, classes meet three times weekly and the credit is three term hours for each half-year.

The hour for the Tufts division is indicated by the letter T; for the Jackson division by J. Initials are used for the days of the week, thus: *MWF*, Monday, Wednesday, and Friday; *TTS*, Tuesday, Thursday, and Saturday. The numeral following these letters indicates the program-hour, not the time of day. The working day is divided into seven periods, beginning respectively at 8.00, 8.45, 9.45, 11.05, 12.05, 2.05, and 3.05, and the hours are numbered in that order. Thus, *MWF* 2

means 8.45 on the respective days; *TTS 4* means 11.05, etc. Only laboratory work is assigned to *MWF 1* and *TTS 1* (8.00). If both divisions are at the same hour, or if there is but one division, the statement reads T J *MWF 4*.

Subjects enclosed in brackets are not offered during the current year. In many cases alternates are indicated, which fill their places in the program for this year. If less than four qualified students apply for an announced course, the instructor is permitted to cancel the announcement unless the course is a part of the required work for any student applying. Subjects marked with an asterisk (*) will not be counted for honors. Subjects marked with a double asterisk (**) will be counted for honors only when special conditions are complied with.

No two subjects assigned to the same hour can be taken simultaneously by any student.

12 ENGLISH

PROFESSOR JONES AND PROFESSOR WHITTEMORE

The work of the department of English includes composition and the study of literature. Subjects 1, 2, 4, and 23 give practice in one or another form of composition as the result immediately held in view, but written English is required also in many of the classes aiming primarily at literary study. See also subject 7. Subjects 1 and 2 are prescribed for all students. Major students in English are required to take English 11 in the earlier years of their course. Other subjects offer opportunity for practice in advanced composition, and for the study of eminent authors, of leading critical essays, of the development of English drama and fiction. English 10, 11, or 12 may be counted for honors, provided only one of these subjects is so counted.

SUBJECTS

*1. The Forms of Discourse. Exposition and Argumentation. Lectures, text-books, outside reading, themes, and conferences. T *TTS 2*; J *TTS 4*. (F) MR. GILMER AND PROFESSOR DAVIES

*2. The Forms of Discourse. Description and Narration. Lectures, text-book, outside reading, themes, and conferences. T *TTS 2*; J *TTS 4*. (S) MR. GILMER AND PROFESSOR DAVIES

[4. Advanced Composition. Lectures, themes, conferences. (S) —— ——]

English 4 is open to those who have obtained at least Grade C in English 1 and English 2.

[7. English Versification. Study of the nature and the forms of poetry. Composition. (S) —— ——]

**10. The English Bible. T J *TTS 2*. PRESIDENT HAMILTON

**11. General View of English Literature. The study of representative masterpieces. Lectures, text-books, required reading, papers. T *MWF 2*; J *MWF 5*. MR. GILMER

[**12. American Literature. Lectures, required reading, text-book, essays. PROFESSOR JONES]

34. Tennyson and Browning. Lectures, reading, brief critical essays. T J *MWF 3*. PROFESSOR JONES

24. Poetry of the Nineteenth Century, except Tennyson and Browning. T J *MWF 4* (F) PROFESSOR JONES

[16. Milton and his Time. Lectures, readings, brief critical essays. PROFESSOR WHITTEMORE]

17. Shakespeare. Minute study of a few plays, lectures, quizzes. T J *MWF 2*. (F) PROFESSOR JONES

18. Shakespeare. Reading of selected plays, lectures, brief critical essays. T J *MWF 2*. (S) PROFESSOR JONES

[19. The age of Chaucer. Study of forms and pronunciation, reading of selections from Chaucer and his contemporaries. —— ——]

20. Old English. Introduction to the language and literature of the Anglo-Saxons, with lectures on the origin and early development of the English tongue. Grammatical and literary study of select prose and poetical texts. T J *TTS 5*. DR. KIP

[21. The Principles of Criticism. Plato, Aristotle, Longinus, Quintilian, Burke, Lessing, Coleridge, Pater. (S) PROFESSOR WHITTEMORE]

[23. The Short Story. Examples, and composition. (F) PROFESSOR WHITTEMORE]

25. Development of the Drama. T J *TTS 4*. MR. GILMER

[26. Development of the English Novel, in the eighteenth and nineteenth centuries. —— ——]

28. Seminar in Tennyson. T J *MWF 5*. PROFESSOR JONES

English 28 is open only to advanced students of English.

36. Thomas Carlyle. M J *MWF 4*. (S) PROFESSOR JONES

18 ORATORY

It is intended that the study of oratory shall benefit the student, whether or not he looks to public speaking as a part of his profession. Oratory 1 aims at securing intelligent, natural, and forcible speech. The principles that underlie good public speaking are pointed out, and applied in individual practice. Oratory 2 is not organically connected with Oratory 1, but offers practice in argumentation and debate to Sophomores, Juniors, and Seniors.

SUBJECTS

1. The Principles of Oratory. Correct breathing and tone production; placing the voice; enunciation and pronunciation; attitude and gesture. Conferences. (S) MR. ——

[2. Argumentation and Debate. Text-book, papers, impromptu and prepared debate. Individual criticism. T J *MWF* 4. (F) MR. GILMER]

22 GERMAN

PROFESSOR FAY

The aim of the department is twofold, according as the student has entered with the elementary or a more advanced requirement. In the former case it is to lead him in the briefest possible time to such a mastery of the language as will enable him to use it as a source of information and medium of literary culture; where this preliminary work has already been done, to afford this literary culture itself, together with such historical and linguistic knowledge as may properly accompany advanced work in a literary department. Hence, in the elementary subjects, facility and accuracy of translation are sought by means of copious reading and careful grammatical drill; later the classic masterpieces are read for their own sake, together with such historical material as will throw light upon the epoch in which they were written or with which they deal; in the advanced work the systematic study of the history of the literature is undertaken, and opportunity is afforded for acquiring a knowledge of the earlier literary forms.

Six consecutive subjects are offered. While it is not impossible to take them all within the four college years, the scheme is based upon the supposition that the earlier subjects will have been taken in the preparatory school.

SUBJECTS

*1. Elementary German. The essentials of grammar; a German reader; reading of modern prose; dictation and composition. T *MWF 4*; J *MWF 5*. ASSISTANT PROFESSOR REED

German 1 is the equivalent of the entrance requirement in Elementary German.

*2. Intermediate German. Review of grammatical principles, especially with reference to syntax. Reading of works by modern authors, lyrics and ballads. Dictation and composition. T *MWF 3*; J *TTS 3*.
ASSISTANT PROFESSOR REED

German 2 is open to entering students who have presented Elementary German for admission. It is possible for a student who has done with distinction the work of German 1, and who shall do a prescribed amount of outside reading, to omit this subject and enter German 3.

**3. First half-year: the rapid reading of modern prose in contemporary authors. Second half-year: introduction to the classic authors: Lessing, Minna von Barnhelm; Schiller, Die Jungfrau von Orleans; Goethe, Hermann und Dorothea. T *MWF 4*; J *TTS 2*. PROFESSOR FAY

German 3 is open to entering students who have presented Intermediate German for admission. Either half-year may be counted as a half-subject.

**3B. German Composition, written and oral. Translation from English into German; paraphrase of a German text. T J *TTS 5*.
ASSISTANT PROFESSOR REED

German 3B is offered to students who are taking or have previously taken German 3 or its equivalent.

4. Schiller and Goethe. Maria Stuart, Wallenstein, and Ballads of Schiller; Egmont, and selections from prose works of Goethe. Collateral reading. Dictation. T J *MWF 5*. PROFESSOR FAY

German 4 is open to entering students who have presented Advanced German for admission. Juniors and Seniors whose major department is German may be permitted to take 4 and 5 in the same year.

5. Advanced reading in Lessing and Goethe. Nathan der Weise, Emilia Galotti, Laokoon; Tasso, Iphigenie, Faust, Parts I and II, with collateral reading. T J *MWF 7*. PROFESSOR FAY

6. History of German Literature, with illustrative works for leading epochs. Middle High German: Bachmann, Mittelhochdeutsches Lesebuch. T J *MWF 3*. PROFESSOR FAY

32 FRENCH

PROFESSOR FAY AND PROFESSOR LEWIS

The plan and scope of the department are, in general, the same as those of the department of German, to the statement

of which the student is referred. Six consecutive subjects are offered.

SUBJECTS

*1. Elementary French. The essentials of grammar, with composition. Grandgent's Grammar; a French reader; reading of short works of modern authors in prose and verse. T J *MWF 5*. MR. GREENE

French 1 is the equivalent of the entrance requirement in Elementary French.

*2. Review of grammatical principles, especially with reference to syntax; exercise in composition; vocabulary practice; reading of modern fiction and drama, such as Mérimée's Colomba and Sandeau's Mademoiselle de la Seiglière. T *MWF 3*; J *MWF 7*.
PROFESSOR HAYDEN AND MR. GREENE

French 2, is open to entering students who have presented Elementary French for admission.

**3. Reading of modern authors (Taine or de Vigny, and novelists); introduction to seventeenth-century classics (Corneille, Racine, Molière, Boileau). Review of grammatical principles, with advanced vocabulary practice. T J *MWF 6*. PROFESSOR LEWIS AND MR. GREENE

French 3 is open to entering students who have presented Intermediate French for admission. Either half-year may count as a half-subject.

**3B. French Composition. Fraser and Squair, French Grammar; Sanderson, Through France and the French Syntax; Kron, Rippmann, and Buell, French Daily Life. T J *TTS 5*. MR. GREENE

French 3B is ordinarily open only to students who have completed French 3.

4. Literature and Manners of the Seventeenth Century. Crane's Société française au XVIIe Siècle; Molière, Le Misanthrope, Les Précieuses Ridicules, Les Femmes Savantes; Boileau, Les Héros de Roman; Madame de Sévigné; La Fontaine, Fables (selected); Warren's French Prose of the XVIIth Century; collateral reading touching the political history of the period, and selections from modern critics. T J *TTS 3*.
PROFESSOR FAY

French 4 is open to entering students who have presented Advanced French for admission. Juniors and Seniors whose major department is French may be permitted to take 4 and 5 in the same year.

5. Literature of the Eighteenth and Nineteenth Centuries. The drama, poetry, the novel, the philosophical essay, and criticism. T J *TTS 2*.
PROFESSOR LEWIS

Either half-year may count as a half-subject.

6. A systematic study of French literature from the earliest times to the middle of the nineteenth century. The manual of Petit de Julleville, Lanson and others, will be read, in the whole or in part, together with illustrative texts for the several epochs, from which some period will be chosen for more detailed study. T J *MWF* 7. PROFESSOR FAY

42 ITALIAN

PROFESSOR FAY

The work offered in Italian is open to those only who have had two years of college study in French, or its equivalent. With such previous training, the student is able to acquire with rapidity a reading knowledge of the language, and thus to become acquainted within the year with characteristics of contemporary and classic literature. This subject is presented in alternate years.

SUBJECT

[1. Grandgent's Grammar and Composition; Bowen's Reader; Maffei, Merope; Dante, Divina Commedia (Scartazzini's edition).

PROFESSOR FAY]

52 LATIN

PROFESSOR DENISON

The aim of the department of Latin is to lead students to a thorough appreciation of a language and people that have had profound influence on modern life and literature. A wide range of reading is offered, to give opportunity for acquaintance with every important division of Latin literature. Considerable time is devoted to reading at sight. The attention of students is directed constantly to the history, archæology, art, public and private life, and religion of the Roman people, as well as to the formation and structure of their language and its relation to other languages. Due emphasis is laid on the connection between ancient and modern life and thought. The various reading courses are supplemented with lectures on appropriate topics, and are illustrated from time to time with the stereopticon. Courses 3, 4, 6, as well as all subjects in Classical Archæology, are suitable for graduate students. The authors and works named below may be changed, but are fairly indicative of the character of the work in the several subjects.

SUBJECTS

*1. Cicero, De Senectute, or selected letters; Vergil, Eclogues; Horace, Odes, Books i–iii; Livy, selections; reading at sight; lectures on suitable topics. T *MWF 7*; J *MWF 2*. PROFESSOR DENISON

Latin 1 is introductory to all later subjects.

2. Pliny, selected letters; Horace, Odes, Book iv; Terence, Phormio; Apuleius, Story of Cupid and Psyche; Petronius, Cena Trimalchionis. This subject introduces the student to the early drama and also to the authors of the Silver Age. T J *TTS 4*. PROFESSOR DENISON

Latin 2 is open to students who have completed Latin 1.

[3. Juvenal, principal Satires; Martial, selected Epigrams; Cicero, Dream of Scipio; Tacitus, Agricola and Germania; Catullus; reading at sight. Juvenal and Martial will be studied with special reference to the information they afford concerning the history and life of the early empire. PROFESSOR DENISON]

4. Horace, Satires and Epistles; Plautus, one or two plays; Cicero, selected letters; Tibullus and Propertius; reading at sight. T J *TTS 3*. PROFESSOR DENISON

Subjects 3 and 4 will be given in alternate years, and are designed for those who have completed Latin 2, or its equivalent. They may, by special arrangement with the instructor, be taken as half-subjects in either half-year.

*5. Latin Composition. This course may accompany Latin 1 or be taken later in connection with other subjects offered by the department. T J *Tu 5*. PROFESSOR DENISON

6. Latin Composition. Latin 6 is open only to students who have completed Latin 5. In it particular attention is paid to idiom and style. By reason of the variation of the work from year to year, the subject may be taken a second time with due credit. T J *Th 6*. PROFESSOR DENISON

NOTE: — The attention of Greek and Latin students is called to related subjects listed under Classical History and Archæology.

62 GREEK

PROFESSOR WADE

The aim of the department is to treat the Greek language not merely as a disciplinary instrument, but as a factor in the broadest and most liberal culture. Throughout the course the practice of reading at sight is encouraged, and especial effort is made to develop such facility that the student may resort with pleasure to the masterpieces of the Greek language, and find in them the delights and inspiration of a noble literature.

To this end also considerable attention is paid to the style and literary characteristics of the authors read. The relations of Greek to the Latin, German, and English languages are discussed, and the course is shaped to develop, discipline, and enrich the linguistic resources of the student. Reading without translation is encouraged from the beginning. Incidentally, studies are made of the customs and daily life of the people. Discussion relative to the laws, philosophy, and religion of the Greeks is introduced, and some attempt is made to exhibit the indebtedness of modern civilization to Hellenism.

SUBJECTS

*1. Elementary. Goodwin's Grammar; Xenophon, Anabasis; Homer T J, *Double subject, daily, MWF 2 and TTS 4.* PROFESSOR WADE

Greek 1 is intended for students entering without Greek and wishing to begin the study of that language. It is assumed that their previous training in linguistic studies will enable them to proceed rapidly and accomplish in one year all the work usually done in preparation for college. This subject may be taken (without credit) as a normal course by advanced students, on consultation with the instructor.

**2. Xenophon, Memorabilia; Homer, Odyssey; Euripides, one play. T *MWF 4*; J *MWF 6.* PROFESSOR WADE

Greek 2 is for students who have passed Greek 1, or the entrance requirements in Greek.

3. Herodotus, Books VII and VIII; Æschylus, The Persians; Sophocles, Antigone; Euripides, Alcestis. T J *MWF 3.* PROFESSOR WADE

[4. Lyric and Elegiac Poets, to Pindar. Aristophanes: Clouds, Birds, Acharnians, Frogs, with study of social life in Athens in the fifth century B. C. PROFESSOR WADE]

5. Theocritus, Idyls, with study of the Alexandrine age; Lucian; Homer, the Iliad, or the Odyssey, entire, with lectures on the results of the more recent investigations of the Homeric question. T J *MWF 6.*
PROFFSSOR WADE

Subjects 4 and 5 will be given in alternate years, and are designed for those who have completed Greek 3 or its equivalent. They may, by arrangement with the instructor, be taken as half-subjects in either half-year.

**6. Greek Composition; practice in sight reading. *One hour a week.* T J *M 8.* PROFESSOR WADE

Greek 6 may be taken by anyone who has had the equivalent of Greek 1.

7. Greek Composition; reading at sight. *One hour a week.*
PROFESSOR WADE

Greek 7 is open only to students who have completed Greek 6.

NOTE; — No student can be recommended as a teacher of Greek who has not taken at least one subject in Greek composition.

28 CLASSICAL HISTORY AND ARCHÆOLOGY

Under Classical History and Archæology are grouped subjects of the Greek and Latin departments which deal, to a large measure in lecture form, with the art, history, life (both public and private), and religion of the Ancient Greeks and Romans. The work will consist of lectures, collateral reading and investigation, and papers, There will be illustration, wherever possible, with photographs, stereopticon, and specimens. The following subjects are intended to supplement the reading of classical authors, which naturally forms the basis of serious study in Classical History and Archæology.

SUBJECTS

[1. Greek, Roman, and Etruscan Architecture. (F)
PROFESSOR DENISON

[2. Greek and Roman Sculpture. (S) PROFESSOR WADE]

Caassical Archæology 1 and 2 will be given in 1913–14.

3. Roman Private Life. T J *MWF* 4. (F) PROFESSOR DENISON

[4. Greek Public aud Private Life. (S) PROFESSOR WADE]

In subjects 3 and 4 there will be systematic treatment of such topics as the customs pertaining to birth, education, marriage, death, the house, furniture, dress, meals, amusements.

[5. Roman Public Life. (F) PROFESSOR DENISON]

Classical Archæology 4 and 5 will be given in 1912–13.

In subject 5 there will be systematic study of such topics as the geography and topography of the Roman world, commerce and navigation, political, legal, and military institutions, measures and money, books, inscriptions, religion and festivals, chronology and calendar.

6. Greek Mythology and Religion. The underlying principles of Greek religion will be considered. The Myths will be treated in their relation to ancient and modern literature and art. Lectures and text book (Fairbanks, Greek Mythology). T J *MWF* 4. (S) PROFESSOR WADE

7. Greek History. From the earliest times to the rise of Macedon, with consideration of the sources. Textbook (Bury) and lectures. T J *MWF* 5. (F) PROFESSOR WADE

8. History of Rome. From the beginnings of the City to the Fall of the Western Empire. Lectures, text book, recitations, study of the sources. T J *MWF* 5. (S) PROFESSOR DENISON

16 PHILOSOPHY*

PROFESSOR CUSHMAN AND PROFESSOR TOUSEY

The department offers work in all the traditional branches of philosophy, adapted to the needs of many kinds of students. To the specialist in science it affords a comprehensive view of the sciences from the point of view of metaphysics. To the student seeking general culture it affords the liberalizing study of the history of philosophy. To the student of mathematics it commends logic as a necessary supplement to his work. To the specialist in philosophy it will give work as far as an undergraduate should go. The beginner has open to him the choice of three subjects: logic, psychology, and the history of philosophy. In all cases where there is opportunity it is advised that the student begin with the history of philosophy. To follow this natural course makes of philosophy an inductive science. The other subjects may then follow at the student's option, or as his specific needs seem to demand. Students choosing philosophy as their major department will be expected to take at least three term hours each in the history of philosophy, logic, and psychology, and to make up three years of continuous work. The Philosophical Club holds meetings during the year. It gives opportunity to the students of discussing philosophical subjects collateral with the regular work, and often invites eminent persons to address it on special topics.

INTRODUCTORY SUBJECTS

☞Before pursuing Advanced Subjects in philosophy, students must have passed satisfactorily in one of these Introductory Subjects.

1. History of Ancient Philosophy: the religious period of ancient thought, the pre-Socratic Greeks, the Greek Enlightenment, Plato and Aristotle; the Hellenic-Roman thought, including Stoicism, Epicureanism, neo-Platonism, and early Christianity. Lectures, and text-book: Cushman's Beginner's History of Philosophy. T *TTS* 4; J *MWF* 4. (F)
PROFESSOR CUSHMAN

*The three departments of Philosophy, History and Public Law, and Political Science constitute the group of Mental and Moral Science, in at least two of which twelve term-hours of work are required for the degree of A.B.

2. History of Modern Philosophy: the beginnings of modern thought in the middle ages, the Renaissance (1500-1690), the modern Enlightenment (1690-1781), German philosophy from Kant to Hegel (1781-1831), modern Evolution theories. Lectures and text-book; Cushman's Beginner's History of Philosophy. T *TTS 4*; J *MWF 4*. (S) PROFESSOR CUSHMAN

3. Logic. Scope of the science; psychological data; concepts and propositions; first principles of thought; inference, deductive and inductive; elementary study of fallacies. T J *MWF 7*. (F) DR. SCHMIDT

55. Psychology. Lectures and illustrative experiments. The phenomena of consciousness are studied with reference to the physiology of the nervous system, including the brain, eye, ear, skin, nose, and mouth. The elements of consciousness, social psychology. Laboratory demonstrations. T J *MWF 2*. PROFESSOR CUSHMAN

ADVANCED SUBJECTS

4. Logic. Special discussion of the more important themes of Philosophy 3; particular consideration of scientific method; recent developments of the science; fallacious tendencies of mind; advanced treatment of fallacies. T J *MWF 7*. (S) PROFESSOR TOUSEY

Philosophy 4 is open only to those who have received credit in Philosophy 3.

[17. Logic. Studies in argumentative literature, with the aim to bring logical theory into relation with the practical requirements of research, advocacy, and criticism; and to illustrate the principles governing the effective presentation of arguments. Use will be made of selected examples of reasoned discourse, supplemented by discussions, and constructive work by the student. (S) PROFESSOR TOUSEY]

Philosophy 17 is open only to those who have received credit in Philosophy 3.

6. Ethics, Theory of. The moral nature; springs of conduct; moral judgments; theories of the moral standard, particularly sentimentalism, hedonism, rigorism, eudæmonism; moral volition, with critical examination of the doctrines of free will and determinism; the moral ideal. Text-books, lectures, assigned reading, themes. T J *TTS 5*. (F)
PROFESSOR TOUSEY

7. Ethics, Applied. Bearing of moral theory on the problems of (*a*) the individual life, (*b*) the social life. Special consideration of duties, rights, temperance, charities, moral pathology, penology, ethics of belief. Text-books, lectures, prescribed reading, and theses. T J *TTS 5*. (S) PROFESSOR TOUSEY

8. Ethics, Historical and Critical. History of ethical speculation; development of moral customs and ideals. Text-books, lectures, prescribed studies in the classics of ethical literature, and theses. (F)
PROFESSOR TOUSEY

9. Metaphysics: the Theory of Reality, including a review and criticism of the common theories of life, such as materialism, realism, theism, mysticism, idealism, and the fundamental problems involved. Lectures, theses, text-book.

The problems discussed are those fundamental to science, ethics, æsthetics, and logic, considered from the point of view of metaphysics. Among these are the questions of teleology, consciousness and self-consciousness, personality, immortality, freedom and necessity, causation, nature, evil, beauty. PROFESSOR CUSHMAN

[11. English Philosophy from Hobbes to Hume. The historical development of the English school of thought until Hume, with a critical and expository reading of the works of Hobbes, Locke, Berkeley, and Hume, together with a survey of contemporaneous and other political theories, such as those of Spinoza, Hooker, Rousseau, and Grotius. (S)
PROFESSOR CUSHMAN]

[12. The Philosophy of Kant. A careful critical and expository reading of the Critiques of the Pure Reason, the Practical Reason, and the Judgment, in Watson's translation. The historical position of Kant with reference to his predecessors and to his influence upon modern thought. Lectures, prescribed reading. (S) PROFESSOR CUSHMAN]

13. Descartes, Spinoza, and Leibnitz, their historical development and doctrines, with a critical and expository reading of their works. Lectures and prescribed reading. (S) PROFESSOR CUSHMAN

14. Plato: reading of the Dialogues, Jowett's translation.
PROFESSOR CUSHMAN

15. The Philosophy of Theism. The final problem; limits of the intelligence; final cause in nature; evidences of a moral order; theistic and anti-theistic argumentation; intuitivism. T J *TTS 3*.
PROFESSOR TOUSEY

26 EDUCATION

The courses in Education are of value for those pursuing general culture as well as for those intending to become teachers. They are arranged to meet the growing requirements of the best city school boards. Students intending to teach should take in connection with the subject given below the course in General Psychology (Philosophy 55).

SUBJECTS

[11. First term: The History of Education. A general review of Educational movements in Europe since the Greeks, with some reference to Oriental systems. Lectures, Munroe's History of Education, biographies. Second term: Educational Theory. The discussion of the psychological

principles involved in education. The school as a factor in society. Lectures and text-book; educational reports; discussions. Supplementary lectures on methods by teachers from secondary schools. —— ——]

36 HISTORY AND 46 PUBLIC LAW*

PROFESSOR EVANS, PROFESSOR BOLLES, AND ASSOCIATE PROFESSOR ANDREWS

The department aims to develop the idea of unity in the history of mankind, and to make the study of all history of practical value through its relation to present-day problems and conditions. To this end the approach is made through subjects intended to give a thorough scientific knowledge of essential facts, and so arranged as to show these facts in their proper relations. History 1 is the introductory subject by which the student is prepared for more detailed work. History 2 is devoted to the history of England, History 3 to the history of the United States. The subjects numbered from 4 to 7 offer to properly qualified students opportunity to make a more detailed study of limited periods. These subjects are arranged in two series, which alternate with each other from year to year, and thus cover a considerable range. History 15 is devoted to research.

Students expecting to make History their principal study are urged to devote considerable time in their first and second years to the study of modern languages. In History 4, 6, 7, 8, 19, and 20 a reading knowledge of French is assumed.

In the division of Public Law and Administration the object is to furnish such general knowledge of political institutions and their working as is needed by every intelligent citizen, and also to assist those who expect to enter the legal profession or the government service. The study of law and government is closely related to the study of history, and hence one year of history is required for admission to the work in Public Law. The work in this group begins with a study of the political institutions of the United States, subjects dealing with the

* See note to introduction of the Department of Philosophy.

institutions of our own and of other countries, followed by subjects treating international relations. A knowledge of French is desirable, and in some cases indispensable.

36 History

SUBJECTS

1. The General History of Europe since the Fall of Rome. History 1 is an outline course, designed to give a comprehensive view of the various political, religious, industrial, and social factors of the history of Europe, and thus to pave the way for a more detailed study of limited periods. Text-books, lectures, assigned readings, and the preparation of themes. T *MWF 5*; J *TTS 4*. DR. BONHAM

History 1 and 2 will not be accepted for an advanced degree. Students desiring to take as many subjects as possible in the department should elect History 1 and 2 in their second year.

2. General History of England. Text-book, lectures, analyses, and themes. T J *MWF 2* PROFESSOR BOLLES

3. General History of America. Text-book, lectures, analyses, and themes. T J *MWF 4*. PROFESSOR BOLLES

4. The History of Europe during the period of the Renaissance and Reformation; the study of the Italian cities and the rise of Italian humanism; the religious, intellectual, economic, and political conditions which gave rise to the Protestant movement in the various countries. Emphasis will be placed upon the beginnings of modern diplomacy, and of international relations. Text-books, lectures, assigned reading, and one thesis. T J *TTS 3*. (F) ASSOCIATE PROFESSOR ANDREWS

8. The History of Europe during the period of the Catholic Reformation, the study of the Inquisition, the Jesuits, and the Council of Trent; the history of Spain to the peace of the Pyrenees; the affairs of Central and Eastern Europe through the Thirty Years War; the development of France through the rule of Richelieu and Mazarin, and the causes, events, and results of the Thirty Years War. Text-book, lectures, assigned reading and one thesis. (For students who take History 4 the first term, this thesis will be an extension or a more extensive study of their special topic in the former course.) T J *TTS 3*. (S) ASSOCIATE PROFESSOR ANDREWS

[6. The French Revolution and the Napoleonic Period. The history of Europe from 1789 to 1815. (F) ASSOCIATE PROFESSOR ANDREWS]

[7. Modern Europe, 1850–1912. One of the chief purposes of History 7 is to furnish some explanation of present-day questions in European politics. (S) ASSOCIATE PROFESSOR ANDREWS]

History 6 and 7 may be expected in 1912-13.

[19. The History of the Nearer Eastern question from the earliest times to the beginning of the decline of the Ottoman Empire. This subject includes the history and institutions of the countries and peoples in the Nearer East, including especially the Balkan Peninsula, Greece, Asia Minor, Egypt, and northern Africa. Lectures, discussions, assigned reading, and one thesis. (F) ASSOCIATE PROFESSOR ANDREWS]

[20. The History of the Nearer Eastern question from the beginning of the decline of the Ottoman Empire to the present day. Special emphasis will be placed upon the diplomatic side and the attitude of the European Powers. Lectures, discussions, assigned reading, and one thesis, which may be a continuation of the thesis prepared for History 19. (S) ASSOCIATE PROFESSOR ANDREWS]

History 19 and 20 will be given in 1912–1913.

15. Seminary in History and Public Law. Investigation of selected topics from the sources. During the year 1911–12 the subject of study will be taken from the diplomatic history of Europe. History 15 is open only to such students as receive the special permission of the instructor. *Hours and credit to be arranged with the instructor.*

ASSOCIATE PROFESSOR ANDREWS

46 Public Law and Administration

SUBJECTS

☞History 1 must precede or accompany any subject in Public Law. Students desiring to take all the subjects in this group should elect History 1 in their second year, and Public Law 1 and 2, or their alternates, in their third year.

[1. Political Institutions of the United States — Federal, State, and Municipal. A study is made of government from the standpoint both of constitutional arrangements and of its actual working as modified by usage and existing conditions. Political parties and their organization, together with the attempts made to regulate them by law, will be studied. Text-book: Bryce, The American Commonwealth, accompanied by lectures, assigned readings, and the preparation of a thesis. (F) PROFESSOR ———]

[8. Colonial Governments: The governments of colonies and dependencies throughout the world. Attention will be given to the history of modern colonization, to past and present experiments in administration, and to the international aspects of the colonial development of modern nations. Lectures, discussions, and one thesis. (S)

ASSOCIATE PROFESSOR ANDREWS]

Public Law 1 and 8 may be expected in 1913–14.

3. Modern English Government. Detailed study of the actual working of the English Government. Attention will be given to the procedure of Parliament and its relation to the executive, to the administrative

structure, the organization and influence of political parties, and colonial relations. Comparisons with American and Continental political conditions will be attempted. Text-book, lectures, assigned reading, and one thesis. T J *MWF* 3. (F) ASSOCIATE PROFESSOR ANDREWS

4. European Government and Politics. A study of the constitutions of the chief European states, together with a consideration of some of the most important questions of European politics. A reading knowledge of French is desirable. Text-book, lectures, assigned reading, and the preparation of a thesis. T J *MWF* 3. (S) ASSOCIATE PROFESSOR ANDREWS

[5. International Law. The history of international law, a consideration of its leading principles, and some account of the most important treaties, arbitration conventions, and congresses. Text-book, lectures, assigned readings, and the preparation of a thesis. (F) ASSOCIATE PROFESSOR ANDREWS]

[9. The History of Modern Diplomacy, from the Italian Wars of the Sixteenth century to the present day, including the study of the principal alliances and diplomatic controversies among European nations. Lectures, discussions, and one thesis. (S) ASSOCIATE PROFESSOR ANDREWS]

Public Law 5 and 9 may be expected in 1912–1913.

66 POLITICAL SCIENCE*

PROFESSOR METCALF

In its course of instruction, the chief aim of the department of Political Science is to give a general view of the most important branches of economics, beginning with the elements of the science and passing by degrees to work of the investigative order. In addition to this broad general outline of economics, the courses and the methods of study are arranged with reference to the constantly increasing needs of those who are fitting themselves for various practical careers, such as banking, transportation, or mercantile work; and to those who look forward to social and philanthropic work as a profession. Subjects 3, 13, 6, 14, 15, 16 and 17, are especially designed as training for those who are planning for a business career, or for social and philanthropic work as a profession.

Subject 1 is designed to lay the foundation for the more advanced work, but endeavors at the same time to satisfy the wants of those who seek simply a general knowledge of econom-

* See note to introduction of the Department of Philosophy.

ics. It is open to Freshmen. The character of the work in the advanced subjects is outlined in connection with the following statement. The attention of students is called to allied subjects in the department of Applied Christianity.

SUBJECTS

*1. Elements of Economics. (a) Exposition of the fundamental principles of the production, distribution, exchange, and consumption of wealth. Economics 1 does not count for honors. (b) The present organization and management of industry, trades unions, coöperation, profit-sharing, immigration, child labor, woman in industry, factory legislation, workingmen's insurance, socialism. Ely's Outlines of Economics will be used as a guide. T J *MWF 3*. PROFESSOR METCALF AND MR. BLAKEY

Economics 1, or its equivalent, is introductory to all the other subjects offered by the department.

2. Modern Industrial History of Europe. After a brief survey of the economic conditions in the European countries at the close of the Middle Ages, the chief attention will be given to the Industrial Revolution in England, and to the rise of modern industrial Germany. Lectures and recitations. T J *MWF 4*. (F) MR. BLAKEY

[22. Economic and Industrial History of the United States. Bogart's Economic History of the United States is used as a guide. (F) MR. BLAKEY]

3. Sociology. This course will be theoretical, dealing with the nature and scope of Sociology, its relation to other studies, especially to Philosophy, Ethics and Economics, with consideration of various theories of social progress. Lectures, discussions and assigned reading, principally from Carver's "Sociology and Social Progress." T J *TTS 4*. (F) MR. BRISTOL

13. Practical Sociology. Concrete problems in the light of the laws of social science and principles of social progress. The family, history and modern methods of poor relief, criminology, penology, housing and city planning; public control, ownership, and operation of public service utilities; education for social efficiency; principles adapted to the work of social organizers; social and philanthropic work as a profession for men and women. T J *TTS 4*. (S) MR. BRISTOL

4. Principles of Public Finance. Public expenditures; classification of public revenues; recent reforms in taxation; the development and significance of public debts; financial administration; recent European and American works on finance. The Elements of Public Finance, by Daniels, is used as a guide. Lectures and discussions. T J *MWF 4*. (S) MR. BLAKEY

[5. Fiscal History of the United States: an historical course, with special reference to the financial experience of the United States. Leading topics are Hamilton's financial system; protection and revenue tariffs; the bank question; the fiscal policy of the Civil War; resumption of specie payments; the national banking system; state and local taxation; silver legislation and the panic of 1893; government loans; present currency problems. Dewey's Financial History of the United States is used as a guide. (S) MR. BLAKEY]

6. Modern Industrial Combinations. The economics of corporations, with special reference to the so-called trust problem. Among the topics treated are trust promotion, capitalization, trusts and industrial efficiency, influence of combinations upon prices, profits, wages, rights of investors, international trade, industrial stability, and business honor; the practical results attained through publicity, taxation, recent court decisions, and State regulation. Lectures, recitations, and reports. T J *MWF* 7. (F)
PROFESSOR METCALF

16. Modern Labor Problems. This subject deals mainly with the social and economic problems arising from the relations of employers and their laborers. The chief topics will be the growth, methods, and aims of modern associations of wage earners; methods of conciliation and arbitration; strike and factory legislation; employers' liability and recent compensation acts; compulsory publicity; provident institutions and friendly societies; the relation between trade unions and scientific management. Each member of the class will be expected to make a report upon a labor union. Lectures and recitations. *To be arranged.* (S) PROFESSOR METCALF

10. Transportation Problems. The economic, financial, legal, and social problems arising from modern systems of transportation, with special reference to railway transportation in the United States. Special attention will be given to the recent extensions of Federal control through the Interstate Commerce Commission. Text-book, lectures and recitations. T J *TTS* 5. (S) PROFESSOR METCALF

17. Modern Industrial Organization and Management. Brief survey of the evolution of modern capitalism; plant equipment; the concentration and integration of modern business; defects of the present industrial order; types of business administration and management; the principles of scientific management and their universal application; what employer, employee, consumer, and trade unions gain through the economies of scientific management. Lectures, discussions, and thesis. T J *TTS* 5. (F)
PROFRSSOR METCALF

[14. Theory of Statistics. The aim of this subject is to teach the principles, theory, and practice of the statistical method and to illustrate their application by concrete studies in the most important sources of statistical material. The theoretical part of the work includes the study of averages,

index-numbers, correlation, interpolation, probable errors, and principles of the graphic method. Lectures. Laboratory exercises are required. (F) MR. BLAKEY]

[15. Social Statistics. A detailed study will be made of the methods and generalizations of vital statistics. It is the purpose in the latter half of the subject to give a review of the statistical methods employed in anthropometry and in eugenics and of the more important results that have already been established. Lectures. Laboratory exercises are required. Open to students who have had Economics 14. (S) MR. BLAKEY]

7. The History of Economics: an account of the beginnings, the progress, and the various schools of economic science; study of the writings of Adam Smith, Ricardo, Mill, and others. Political Science 7 is open to advanced students who are specializing in the department. A reading knowledge of French and German is desirable. *To be arranged.* (S) PROFESSOR METCALF

9. Seminar in Economics and Sociology, designed for advanced students who are specializing in the department. Questions in economics, statistics, or sociology may be selected. *Hours and credit to be arranged.* PROFESSOR METCALF, MR. BLAKEY AND MR. BRISTOL

14 MATHEMATICS

PROFESSOR WREN AND PROFESSOR RANSOM

The aim of the instruction in mathematics is to cultivate power of exact thinking, as well as skill in symbolic methods of drawing necessary conclusions. The class-room work is a combination of lectures with questioning of the students to ascertain that the points presented have been duly comprehended.

Mathematics 3, with 1 or 2, constitutes the required work in mathematics. The two required subjects should be taken in the Freshman year. Students who intend to pursue advanced work in the department should take 1 in preference to 2, and should take 4, 5, and 6 in the Sophomore and Junior years. They may then elect any of the remaining subjects.

SUBJECTS

3. Trigonometry. The trigonometric functions, trigonometric analysis, solutions of plane triangles and of right spherical triangles. T *MWF 2 or 3*; J *MWF 3*. (F) PROFESSOR WREN AND MR. BRAY

1. Algebra. Binomial theorem, logarithms, permutations and combinations, probability, determinants, theory of equations, etc., preceded by a brief review of Elementary Algebra. T *MWF 2 or 3*; J *MWF 3*. (S) PROFESSOR WREN AND MR. BRAY

2. Solid Geometry. Solid and spherical geometry including original demonstrations and the solution of numerical problems. *To be arranged.* (S) PROFESSOR WREN AND MR. DILLINGHAM

4. Analytic Geometry. The straight line, circle, parabola, ellipse, hyperbola, higher plane curves, with an introduction to analytic geometry of three dimensions. T *TTS 4*; J *MWF 4*. (F) PROFESSOR WREN AND MR. BRAY

5. Elements of Calculus. Differentiation and integration of the elementary forms of algebraic and transcendental functions with simple applications. T *TTS 4*; J *MWF 4*. (S) PROFESSOR WREN AND MR. BRAY

6. Differential and Integral Calculus. A continuation of course 5, involving application to mechanics and to the theory of plane curves, the determination of lengths, areas and volumes. T J *TTS 2*. (F) PROFESSOR WREN

7. Differential and Integral Calculus (advanced). Numerous applications of the Calculus and the more difficult methods of integration. T J *TTS 2*. (S) PROFESSOR WREN

8. Modern Geometry. Abridged notation, homogeneous co-ordinates, theorems, of Desargue, Pascal and Brianchon, cross ratio, reciprocal polars, circular points at infinity, isotropic lines, projection. Open to students who have completed subjects 1, 3, and 4. *To be arranged.* (S) MR. DILLINGHAM

9. Theory of Equations and Determinants. Transformation of equations; cubic and quartic equations; applications of substitution groups; classification of linear simultaneous equations; properties of determinants. (F) PROFESSOR RANSOM

10. Differential Equations. An elementary course including the solution of ordinary and certain partial differential equations with geometrical and mechanical applications. *To be arranged.* (S) PROFESSOR WREN

12. Vector Analysis. Sums and products; differential operators; applications to geometry, electricity, and dynamics. (F) PROFESSOR RANSOM

Mathematics 12 is open to students who have completed Mathematics 1, 2, 3, 4, 5, and 6.

[14. Theoretical Mechanics. Types of motion; methods of Lagrange, and Hamilton; study of the Gyroscope. (F) or (S) PROFESSOR RANSOM]

24 PHYSICS

PROFESSOR H. G. CHASE

Two subjects are open to those who are beginning Physics. Physics 1 is intended primarily for students in the School of Liberal Arts who are taking but six hours in physics as a part

part in the laboratory, and is designed to give the student the theoretical knowledge and skill in manipulation which are necessary for success in this kind of work. In subject 4 the student is required to analyze the simpler salts, alloys, and minerals. In subject 5, more complicated minerals, alloys, ores, and commercial and food products are analyzed. Organic analysis is included. Technical gas analysis (subject 9) is taught by lectures and laboratory work. The Orsat, Hempel, and Elliott systems are used. Assaying (subject 7) is adapted to familiarizing the student with the practical methods and theory of sampling and assaying gold and silver ores. The above subjects cover a comprehensive study of analytic chemistry, and are intended to give the student such thorough theoretical and practical knowledge as to prepare him for analytical work of almost any description. Metallurgy (subject 8) is intended to give the student some of the more important methods of extracting gold and silver from ores. It should be taken after or in connection with Fire Assay (subject 7). The metallurgy of iron and steel is an alternative.

The work in organic chemistry consists of a course of lectures, together with recitations and laboratory work, which are designed to cover the general principles and methods, and include a description of the most important organic compounds. The laboratory practice in organic chemistry will be carried on in connection with subject 10, and will include the preparation of many typical compounds.

In Chemistry 12, opportunity will be given advanced students, under the direction of instructors, for the consideration and discussion of chemical subjects and recent investigations.

SUBJECTS

1. General Chemistry. Lectures, recitations, and laboratory work. *Two lectures, and one three-hour laboratory period.* T J *TT 5 6 7. Counting as six term hours.* PROFESSOR DURKEE, ASSISTANT PROFESSOR COBB, MR. BAKER AND ASSISTANTS

35-2. Qualitative Analysis. Basic analysis. Lectures, laboratory work and recitations. *Two three-hour periods.* T J *MF 1 2 3, or 6 7 8.* (F) *Counting as two term hours.*

PROFESSOR DURKEE, MR. BAKER, AND ASSISTANTS

35-3. Qualitative Analysis. Acids, analysis of salts, commercial and natural products. Lectures, laboratory work, and recitations. *Two three-hour periods.* T J *MF 1 2 3.* (S) *Counting as two term hours.* MR. BAKER

4. Quantitative Analysis. Gravimetric and volumetric analysis. Lectures and laboratory work. *Three three-hour periods.* T J *TTS 1 2 3. Counting as six term hours.* PROFESSOR DURKEE

5. Quantitative Analysis (advanced course). Analysis of minerals, ores, alloys, water, food products, organic analysis. Laboratory work. *Three three-hour periods.* T J *TTS 1 2 3. Counting as six term hours.* PROFESSOR DURKEE

7. Fire Assay. Open to students who have taken 1, 2, 3, and 4. *Two three-hour periods.* T J *MF 6 7 8.* (S) *Counting as two term hours.* PROFESSOR DURKEE

8. Metallurgy of Gold and Silver. Lectures, recitations, and laboratory work. Chemistry 8 is open to students who have taken Chemistry 1. Metallurgy of iron and steel is alternative. *Two lectures a week, to be arranged.* (S) *Counting as two term hours.* PROFESSOR DURKEE

9. Gas Analysis. Lectures and laboratory work. Chemistry 9 is open to students who have taken Chemistry 1, 2, 3, and 4. *One three-hour period.* T J *F 1 2 3.* (F) *Counting as one term hour.* PROFESSOR DURKEE

35-10. Organic Chemistry. Lectures, recitations, and laboratory work. Chemistry 10 is open to students who have taken Chemistry 1. *Three lectures and one three-hour laboratory period.* T J *TTS 5; W 1 2 3. Counting as eight term hours.* ASSISTANT PROFESSOR COBB

11. Physical Chemistry. Lectures, recitations, and laboratory work. Chemistry 11 is open to students who have taken Chemistry 1, 2, and 4. *Two lectures and one three-hour laboratory period.* T J *MF 5; W 1 2 3. Counting as six term hours.* ASSISTANT PROFESSOR COBB

12. Discussion of Chemical Subjects and Recent Investigations. *One hour a week. To be arranged.* (F)
PROFESSOR DURKEE AND ASSISTANT PROFESSOR COBB

17. Applied Chemistry. A course dealing with the most important applications of inorganic and organic chemistry to manufacturing purposes, such as the production of sulphuric acid, soda, illuminating gas, and sugar. Lectures, visits to plants, text-book work, and recitations. *Two lectures or recitations and one three-hour laboratory period.* T J *TT 8; M 1 2 3. Counting as six term hours.* PROFESSOR DURKEE

16. Thesis. Investigation of a problem in Inorganic, Organic, or Technical Chemistry. Open to students of A.B. and Science Courses who have satisfactorily completed Chemistry 1, 2, 3, 4, 5, and 10. *Nine laboratory hours a week, to be arranged. Counting as six term hours.*
PROFESSOR DURKEE AND ASSISTANT PROFESSOR COBB

part in the laboratory, and is designed to give the student the theoretical knowledge and skill in manipulation which are necessary for success in this kind of work. In subject 4 the student is required to analyze the simpler salts, alloys, and minerals. In subject 5, more complicated minerals, alloys, ores, and commercial and food products are analyzed. Organic analysis is included. Technical gas analysis (subject 9) is taught by lectures and laboratory work. The Orsat, Hempel, and Elliott systems are used. Assaying (subject 7) is adapted to familiarizing the student with the practical methods and theory of sampling and assaying gold and silver ores. The above subjects cover a comprehensive study of analytic chemistry, and are intended to give the student such thorough theoretical and practical knowledge as to prepare him for analytical work of almost any description. Metallurgy (subject 8) is intended to give the student some of the more important methods of extracting gold and silver from ores. It should be taken after or in connection with Fire Assay (subject 7). The metallurgy of iron and steel is an alternative.

The work in organic chemistry consists of a course of lectures, together with recitations and laboratory work, which are designed to cover the general principles and methods, and include a description of the most important organic compounds. The laboratory practice in organic chemistry will be carried on in connection with subject 10, and will include the preparation of many typical compounds.

In Chemistry 12, opportunity will be given advanced students, under the direction of instructors, for the consideration and discussion of chemical subjects and recent investigations.

SUBJECTS

1. General Chemistry. Lectures, recitations, and laboratory work. *Two lectures, and one three-hour laboratory period.* T J *TT 5 6 7. Counting as six term hours.* PROFESSOR DURKEE, ASSISTANT PROFESSOR COBB, MR. BAKER AND ASSISTANTS

35-2. Qualitative Analysis. Basic analysis. Lectures, laboratory work and recitations. *Two three-hour periods.* T J *MF 1 2 3, or 6 7 8.* (F) *Counting as two term hours.*

PROFESSOR DURKEE, MR. BAKER, AND ASSISTANTS

35-3. Qualitative Analysis. Acids, analysis of salts, commercial and natural products. Lectures, laboratory work, and recitations. *Two three-hour periods.* T J *MF 1 2 3.* (S) *Counting as two term hours.* MR. BAKER

4. Quantitative Analysis. Gravimetric and volumetric analysis. Lectures and laboratory work. *Three three-hour periods.* T J *TTS 1 2 3. Counting as six term hours.* PROFESSOR DURKEE

5. Quantitative Analysis (advanced course). Analysis of minerals, ores, alloys, water, food products, organic analysis. Laboratory work. *Three three-hour periods.* T J *TTS 1 2 3. Counting as six term hours.* PROFESSOR DURKEE

7. Fire Assay. Open to students who have taken 1, 2, 3, and 4. *Two three-hour periods.* T J *MF 6 7 8.* (S) *Counting as two term hours.* PROFESSOR DURKEE

8. Metallurgy of Gold and Silver. Lectures, recitations, and laboratory work. Chemistry 8 is open to students who have taken Chemistry 1. Metallurgy of iron and steel is alternative. *Two lectures a week, to be arranged.* (S) *Counting as two term hours.* PROFESSOR DURKEE

9. Gas Analysis. Lectures and laboratory work. Chemistry 9 is open to students who have taken Chemistry 1, 2, 3, and 4. *One three-hour period.* T J *F 1 2 3.* (F) *Counting as one term hour.* PROFESSOR DURKEE

35-10. Organic Chemistry. Lectures, recitations, and laboratory work. Chemistry 10 is open to students who have taken Chemistry 1. *Three lectures and one three-hour laboratory period.* T J *TTS 5; W 1 2 3. Counting as eight term hours.* ASSISTANT PROFESSOR COBB

11. Physical Chemistry. Lectures, recitations, and laboratory work. Chemistry 11 is open to students who have taken Chemistry 1, 2, and 4. *Two lectures and one three-hour laboratory period.* T J *MF 5; W 1 2 3. Counting as six term hours.* ASSISTANT PROFESSOR COBB

12. Discussion of Chemical Subjects and Recent Investigations. *One hour a week. To be arranged.* (F)
PROFESSOR DURKEE AND ASSISTANT PROFESSOR COBB

17. Applied Chemistry. A course dealing with the most important applications of inorganic and organic chemistry to manufacturing purposes, such as the production of sulphuric acid, soda, illuminating gas, and sugar. Lectures, visits to plants, text-book work, and recitations. *Two lectures or recitations and one three-hour laboratory period.* T J *TT 8; M 1 2 3. Counting as six term hours.* PROFESSOR DURKEE

16. Thesis. Investigation of a problem in Inorganic, Organic, or Technical Chemistry. Open to students of A.B. and Science Courses who have satisfactorily completed Chemistry 1, 2, 3, 4, 5, and 10. *Nine laboratory hours a week, to be arranged. Counting as six term hours.*
PROFESSOR DURKEE AND ASSISTANT PROFESSOR COBB

19. Chemistry. This course is primarily intended to enable the students to acquire facility in reading chemical German. The work consists of recitations and special reports on assigned subjects. These assignments are chiefly to articles in the German chemical journals. Open to Juniors and Seniors, candidates for A. B. or B. S., taking chemistry as a major subject, who have had not less than two years of college German or its equivalent. *To be arranged.* (F) ASSISTANT PROFESSOR COBB

44 BIOLOGY

PROFESSOR KINGSLEY AND ASSISTANT PROFESSOR LAMBERT

Instruction in biology is given both by lectures and by laboratory work, the object being to impart the scientific method of work and thought rather than to cram the student with a large number of unimportant facts. In the laboratory, sixty-four hours of work for each half-year is the minimum, but mere time service is not sufficient: a certain series of forms must be studied, to the satisfaction of the instructors.

Biology 1, 2, and 3 are given in alternate years to Tufts and Jackson students, 1 and 3 being open in 1911–12 to Jackson, 2 in the same year to Tufts.

Biology 1 is intended for those who wish to take but a single year of work in this department. Major students, and candidates for the degree of Bachelor of Science in the General Science or the Medical Preparatory Course, will take Biology 2 and 3 in its place.

By special arrangement with the instructor, additional work may be done in connection with Biology 2 and 3, and corresponding credit will be given. Intention of doing such work must be indicated at the time of registration, and the student must also attain grade B in order to obtain such credit.

Three of the subjects in this department (4M, 5M, and 9) are given at the Medical School, 416-430 Huntington Avenue, Boston. These subjects may be taken by candidates for the bachelor's degree, and in this way students contemplating the study of medicine may anticipate one year of their professional course. Those who wish these subjects to count for the bachelor's degree must have previously taken at least Biology 3.

There are three well-lighted laboratories, furnished with every

requisite for good work, including microscopes, microtomes, reagents, and abundant material for illustration and dissection. There is also a department library containing more than 3,800 volumes and over 8,000 pamphlets and parts of volumes, while the college library contains the proceedings of many learned societies, both American and foreign. Besides these, proximity to Boston and Cambridge gives easy access to library facilities unequaled in any other part of America. There is required from all students taking laboratory subjects a laboratory fee of two dollars and fifty cents a term for each subject, payable in advance.

SUBJECTS

1. General Biology. Given in 1911–12 to Jackson; in 1912–13 to Tufts. *Two lectures and four hours of laboratory work.* J *TT 5 6 7. Counting as six term hours.* PROFESSORS KINGSLEY AND LAMBERT

2. Morphology of Invertebrates. Given in 1911–12 to Tufts; in 1912–13 to Jackson. *Two lectures and four hours of laboratory work.* T *Tu 2 3; Th 1 2 3; S 3. Counting as six term hours.*
PROFESSORS KINGSLEY AND LAMBERT

3. Morphology of Vertebrates. Continuation of Biology 2. Given in 1911–12 to Jackson; in 1912–13 to Tufts. *Two lectures and four hours of laboratory work.* J *M 2 3; W 3; F 1 2 3. Counting as six term hours.*
PROFESSOR KINGSLEY

4M. Human and Comparative Physiology. Lectures, recitations, conferences, and laboratory work. *Hours and credit to be arranged.* (S)
PROFESSOR DEARBORN

Biology 4M is given at the Tufts Medical School, Boston.

5M. Histology, Medical. Lectures, quizzes, and laboratory work. *Hours and credit to be arranged.* (F) PROFESSOR BATES AND DR. WINSLOW

Biology 5M is given at the Tufts Medical School, Boston.

6. Systematic Zoology. Laboratory work in the identification and classification of specimens. *Counting as three term hours.* (F) or (S)
PROFESSOR KINGSLEY

Biology 6 requires ability to read French and German.

7. Botany. Lectures and laboratory work. *Two lectures and four hours of laboratory work, to be arranged. Counting as six term hours.*
ASSISTANT PROFESSOR LAMBERT

8. Special Work. The investigation of some problem. *Three hours*

or more of credit, at the rate of thirty-two hours of laboratory work for one hour of credit. To be arranged. PROFESSOR KINGSLEY

9. Human Anatomy. Lectures, quizzes, and dissection. *Hours and credit to be arranged.* (F)

Biology 9 is given at the Tufts Medical School, Boston.

PROFESSOR H. H. GERMAIN

10. Evolution. Lectures, recitations, essays, and required reading. *One hour a week, to be arranged.* (S) PROFESSOR KINGSLEY

54 GEOLOGY

PROFESSOR LANE

The subjects offered in the department of Geology do not form a sequence, but are intended to give different classes of students that knowledge of geology and mineralogy which they need. In all cases, they aim to include some real grasp upon the structure and history of the earth, the problems presented in the study thereof, and the modes of attack upon those problems.

The illustrative collections in these lines are ample. Besides exhibition specimens in the Barnum Museum, there is a working collection illustrating mineralogy, lithology, and dynamical and historical geology. These are supplemented with maps, diagrams, photographs, and lantern slides. The work in each subject consists of lectures and recitations, together with work in the laboratory and in the field. Excursions are taken to neighboring points that illustrate certain phenomena. Tufts College is well placed for field work and for the study of various natural processes. The laboratory fees are four dollars for each subject in mineralogy, and two dollars in geology.

SUBJECTS

1. Physical Geology and Geography. Lectures and recitations; laboratory and field work. Given in 1911–12 to Jackson. *To be arranged.* (S) PROFESSOR LANE

21. Physical Geography and Meteorology. T J *W* 5. *Counting as one term hour.* (F) PROFESSOR LANE

22. Physical Geology. T J *W* 6 7 8; *F* 6. (F) *Counting as two term hours.* PROFESSOR LANE

23. Economic Geology. T J *W* 5. (S) *Counting as one term hour.* PROFESSOR LANE

24. Historical Geology. T J *W 6 7 8; F 6.* (S) *Counting as two term hours.* PROFESSOR LANE

Subjects 21 to 24 are equivalent to the subject formerly known as Geology 2. Subjects 21 and 22 are nearly equivalent to Geology 1. Subject 21 covers that part of physical geography not included in 22.

[3. Mathematical Problems presented to geologists. Conferences and critical reading of selected papers and original work. Mathematics 4 must precede Geology 3; Mathematics 6 must precede or accompany it. PROFESSOR LANE]

[4. Field Geology. Conference, one hour; field work, six hours a week; open to students who have taken Geology 2. *First part of first and last part of second half-year. Counting as three term hours.* PROFESSOR LANE]

64 MINERALOGY

1. Mineralogy and Lithology. (Pirrson.) Open to students who have taken Chemistry 1. *Two recitations and four hours of laboratory work.* T J *MW 4; TT 6 7.* *Counting as three term hours.* (F) PROFESSOR LANE

2. Crystallography and Optical Mineralogy. Open to students who have taken Mineralogy 1. *Two lectures and four hours laboratory work.* T J *MW 4; TT 6 7.* (S) *Counting as three term hours.* PROFESSOR LANE

THEOLOGY

All the subjects offered in the Theological School are open to election by qualified students in the School of Liberal Arts. For details see the announcement of the Crane Theological School.

38 MUSIC

PROFESSOR LEWIS

The department of Music offers opportunities to gain a knowledge of musical history and of the principles of composition, as a basis for practical work in music or in musical criticism. The subjects, Elements of Theory, Harmony, General History of Music, and Musical Appreciation may well be taken, however, by students who have no intention of preparing themselves for professional work in the art.

SUBJECTS

9. Musical Appreciation, Elementary. Systematic studies in musical essentials from the listener's standpoint. T *MWF 5*; J *MWF 7.* (F) PROFESSOR LEWIS

For Music 9 no technical preparation is requisite, but ability to recognize a melody is presupposed. Ability to follow a piano score is very

helpful. Outside reading and laboratory study with automatic instruments are required.

10. Musical Appreciation, Intermediate. A continuation of Music 9. T *MWF 5*; J *MWF 7*. (S) PROFESSOR LEWIS

1. Elements of Theory. Lectures, practice, and analysis, with various text-books for reference. T J *MWF 2*. (F) PROFESSOR LEWIS

Only acquaintance with musical notation and with the piano keyboard is required. Music 1 is introductory to Music 21.

21. Harmony. Lectures and practical work, based on Chadwick's Manual of Harmony; collateral reading on biography and theory. T J *MWF 2*. (S) PROFESSOR LEWIS

[22. Advanced Harmony and Elementary Counterpoint. A continuation of Music 21. (F) PROFESSOR LEWIS]

A full equivalent of Music 21 must have been done by students who wish to begin their college work with Music 22.

[3. Sight-reading in Song, and Harmonic Analysis. (S) PROFESSOR LEWIS]

Only those who have finished Music 22 may take Music 3. The harmonic analysis begun in Music 22 is continued, with special attention to the more difficult problems of modern music. Harmonic Analysis, by B. Cutter, and Melodia, by Cole and Lewis, are the text-books.

4. Counterpoint. Lectures and practical work, based on the manuals of Goetschius, Spalding, and others; collateral reading on biography and theory. *Three hours, to be arranged.* PROFESSOR LEWIS

After 1911–1912, Music 4 will be merged with Music 22, 24, 25.

[24. Counterpoint. Lectures and practical work, based on the manuals of Goetschius, Spalding, and others; collateral reading on biography and theory. (S) PROFESSOR LEWIS]

Laboratory work with the automatic instruments is required.

[6. General History of Music, from the earliest times to the present day, with special attention to the period since the death of Palestrina. Lectures, with various treatises for reference. (S) PROFESSOR LEWIS]

25. Studies in one or more of the following subjects: Canon, Fugue, Orchestration, Form, Free composition, Musical History, Musical Criticism. T J *Tu 6; W 8*. PROFESSOR LEWIS

The studies may be directed by lectures, or may consist of individual work of students under the supervision of the instructor. Requirements as to previous studies in Music and in foreign languages will be given on application to the instructor.

48 THE FINE ARTS

PROFESSOR WHITTEMORE

The department of the Fine Arts stands collaterally with literature and music—offering an opportunity for the study of the history of painting, sculpture, architecture, and the minor arts. The subjects given are open to Sophomores, Juniors, and Seniors.

[2. The Fine Arts of the Middle Ages. (F) PROFESSOR WHITTEMORE]

[3. The Fine Arts of the Renaissance. (S) PROFESSOR WHITTEMORE]

[4. The Fine Arts of Egypt, Assyria, and Greece. (F) PROFESSOR WHITTEMORE]

[5. The Fine Arts of China, Japan, India, and the nearer Orient. (S) PROFESSOR WHITTEMORE]

88 PHYSICAL TRAINING AND HYGIENE

DR. MARTIN

The aim of the department is to secure the interest and participation of the students in such exercises and training as all students need for corrective, hygienic, and recreative purposes.

The object of the work is to give the student such knowledge of the structure and composition of the human body as will enable him to understand its functions and keep it in good condition: to gain a healthy body, erect carriage, self-control, muscular co-ordination, and symmetrical development. These objects are sought by lectures on anatomy, physiology and personal hygiene, regular class exercises in the gymnasium during the winter, and by out-door work in the fall and spring, when the weather is suitable. A medical examination is made and physical measurements and strength tests of all students are taken at the beginning and end of the gymnasium course, and at other times when necessary. These enable the instructor to prescribe special exercises to overcome defects. Students may also receive personal advice with reference to habits of life.

Weekly lectures on hygiene are given during the first term. Outdoor competitive games in spring and fall, and indoor exercises during the winter—calisthenics; Swedish work; Indian club, wand, and dumb-bell drills, boxing and wrestling—are re-

quired two hours a week, from October to May, of all undergraduate students, for the first two years following entrance. Participation in any one of the organized sports may be substituted for the required work, for the time of such participation. The work is optional the remaining years of the course.

The intention of the department is to make physical training of such character that the weakest as well as the strongest can engage in it with profit.

ELECTIVE PHYSICAL TRAINING

[An advanced course, including theory and practice. Hygiene, elementary anatomy, physiology, first aid; the teaching of gymnastics, graduation of exercises, gymnasium management; advanced drills and apparatus work. Lectures, two hours a week (F); drills, two hours a week (F) and (S). *Counting as three term hours.*]

ENGINEERING SCHOOL

Faculty of the Engineering School

RESIDENCE*

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT, 8 Professors Row

GARDNER C. ANTHONY, A.M., SC.D., DEAN . . 14 Professors Row
Professor of Technical Drawing. Acting Head of Department of Mechanical Engineering

PHILIP M. HAYDEN, A.B., SECRETARY . . . . . Dean Hall, 6
Professor of French and Registrar

CHARLES E. FAY, A.M., LITT.D. . . . . 92 Professors Row
Wade Professor of Modern Languages

WILLIAM L. HOOPER, A.M., PH.D. . . . . 124 Professors Row
Professor of Electrical Engineering

ALFRED C. LANE, A.M., PH.D. 1775 Massachusetts Ave., Cambridge
Pearson Professor of Geology and Mineralogy

FRANK B. SANBORN, C.E., M.S. . . 8 Buena Vista Park, Cambridge
Professor of Civil Engineering

FRANK W. DURKEE, A.M. . . . . 38 Professors Row
Professor of Inorganic Chemistry

EDWARD H. ROCKWELL, S.B. . . . 133 Powder House Boulevard, W. Somerville
Professor of Structural Engineering

CHARLES H. CHASE, S.B. . . . . 39 Lincoln St., Stoneham
Professor of Steam Engineering

HARRY G. CHASE, B.S. . . . . 37 Sawyer Avenue
Professor of Physics

SAMUEL C. EARLE, A.M. . . . . 45 Sawyer Avenue
Professor of English

HENRY C. METCALF, A.B., PH.D. . . 31 Sheffield Road, Winchester
Jackson Professor of Political Science

FRANK G. WREN, A.M. . . . . 65 Talbot Avenue
Walker Professor of Mathematics

*The post office address is Tufts College, Mass., unless otherwise indicated.

SAMUEL L. CONNER, B.S. . . . . 23 Bellevue St.
Instructor in Railroad Engineering

WILLIAM R. RANSOM, A.M. . . . . 29 Sawyer Avenue
Professor of Mathematics

WILLIAM H. REED, JR., A.M. . . . . 81 Walnut Ave., Roxbury
Assistant Professor of Modern Languages

GEORGE F. ASHLEY . . . . . 47 Avon St., Somerville
Assistant Professor of Technical Drawing

ERNEST R. GREENE, A.M. . . . . 18 Prentiss St., Cambridge
Instructor in Romance Languages

EDWIN B. ROLLINS, B.S. . . . . 38 Capen St.
Assistant Professor of Electrical Engineering

CHARLES E. STEWART, S.B. . . . . 389 Boston Ave.
Assistant Professor of Mechanic Arts

HOWARD H. CARROLL, S.B. . . . . 66 Wyman St., W. Medford
Instructor in Technical Drawing

PHILIP H. COBB, A.B., PH.D. . . . . Dean Hall, 5
Assistant Professor of Organic and Physical Chemistry

MELVILLE S. MUNRO, B.S. . . . . 101 Talbot Avenue
Instructor in Electrical Engineering

FRANK E. SEAVEY, A.B. . . . . 9 Teele Ave., W. Somerville
Instructor in English

RICHARD C. SMITH, B.S. . . . . 15 Warren St., W. Medford
Instructor in Structural Engineering

ALEXANDER DILLINGHAM, A.M. . . 10 Dow St., W. Somerville
Instructor in Mathematics

HARRY G. PAYROW, B.S. . . . . 11 Dearborn St., Medford
Instructor in Civil Engineering

CARL L. SVENSEN, B.S. . . . . 46 Hillsdale Road
Instructor in Mechanical Engineering

CONRAD A. ADAMS, B.S. . . . . 101 Talbot Ave.
Instructor in Mechanic Arts

JAMES E. SHRADER, A.M. . . . . 9 Curtis St., W. Somerville
Instructor in Physics

NATHANIEL H. KNIGHT, B.S. . . . . 65 Pearson Rd.
Assistant in Physics

ARMAN E. BECKER, A.M. . . . . Paige, 6
Assistant in Physics

HUBERT E. BRAY, A.B. . . . . Dean, 6
Walker Special Instructor in Mathematics

OSCAR MARTIN, M.D. . . . . 18 Fairmount St.
Instructor in Physical Training and Director of the Gymnasium

CHARLES GOTT, A.B. . . . . East, 10
Instructor in English

COMMITTEE ON PROMOTIONS

Dean Anthony, *Chairman*; Professors Hooper, Durkee, Rockwell, and Ashley.

COMMITTEE ON CURRICULUM

Dean Anthony, *Chairman*; Professors Hooper, Sanborn, Durkee Rockwell, C. H. Chase, and Earle.

Courses of Instruction

The School offers courses in CIVIL ENGINEERING, STRUCTURAL ENGINEERING, MECHANICAL ENGINEERING, ELECTRICAL ENGINEERING, and CHEMICAL ENGINEERING, each leading to the degree of Bachelor of Science, and requiring four years of study.

While much of the instruction is of a technical character relating to the several branches of engineering, the first aim of the School is toward a broad intellectual development, and an appreciation of the duties of the educated man. An effective correlation of the subjects serves to promote a great degree of unity and to secure an educational result both scientific and cultural.

During the first two years the course of study is prescribed, being the same for all departments, and the only electives permitted are in English and Modern Languages. The importance of developing the power to write clear and concise English is emphasized by correlating this subject with the work of other departments, thus making it as much a fundamental for technical training as it is for a literary education. The required courses in Mathematics, Physics, and Chemistry, common to every field of engineering, are studied during this period, thus preparing the student for the applied subjects which characterize the work of the Junior and Senior years. A thorough course in the theory and practice of Technical Drawing and of Mechanic Arts is required in all departments during the first two years.

One hundred and forty term hours are required for graduation, this being the equivalent of about fifty-two hours of work per week. One term hour signifies one recitation per week for one term, or one laboratory period of three hours for a term, the recitation period implying two hours of preparation. A grade of C or higher must be obtained in at least 70 term hours.

On the pages immediately following the Courses of Instruction will be found an index of the subjects, which gives a complete view of the system of numbering. The figures following the names of subjects represent the credit in term hours.

Following this index will be found detailed descriptions of the subjects in numerical order.

Permission to take a program in excess of eighteen term hours, except when required by the curriculum, must be obtained by petition to the Committee on Promotions.

FRESHMAN YEAR

[Alike for all courses.]

FIRST TERM			SECOND TERM		
11-1	English	3	11-2	English	3
13-	†French or †German 15 or 22	3	13-	†French or †German 15 or 22	3
21-1	Drawing	5	21-5	Descriptive Geometry	3
29-1	Mathematics	3	25-1	Mechanic Arts	3
29-2	Mathematics	3	29-3	Mathematics	3
	Physical Training	½	31-1	Physics	3
				Physical Training	½
	Total	17½		Total	18½

SOPHOMORE YEAR

[Alike for all courses.]

FIRST TERM			SECOND TERM		
21-8	Drawing	3	21-13	Mechanism	3
29-4	Mathematics	3	29-5	Mathematics	3
31-2	Physics	3	31-3	Physics	3
31-7	Physical Laboratory	2	31-7	Physical Laboratory	1
35-1	Chemistry	3	35-1	Chemistry	3
41-3	Surveying	1	41-3	Surveying	2
	Physical Training	½		Physical Training	½
	Total	15½		Total	15½

Electives

English, or subjects in other departments, subject to approval.

Electives

English, or subjects in other departments, subject to approval.

†As the course to be pursued in modern language is dependent on the preparation of each student, definite instruction for the selection thereof is given in the description of that department of instruction.

CIVIL ENGINEERING

The Civil Engineering graduates enter a great variety of positions. Their work may include municipal engineering, general surveying, water-supplies, sewerage, water-powers, bridges, mill buildings, fire protection, foundations, electric railroads, steam railroads, highways, or contracts and specifications; and these positions may require drafting, computations, or field construction. It therefore becomes the duty of the Department to qualify its students for various fields of employment. The basis of instruction is general engineering education and not specialization. In fact it is recommended that those students who find that they would like to specialize should plan to do so by a graduate year of study after their four years of general engineering education in the Civil Engineering course.

By referring to the detailed list of studies published on another page of this catalogue, it may be seen, however, that a student can select for his Senior year elective studies and a thesis which will give him opportunity to devote most of the year to his chosen field in railroads, hydraulics, or municipal engineering.

In order that the student may observe a direct application of the theory that he is studying, the Department conducts many laboratory and field courses. These include field practice in topographical and railroad surveying (for which the college location affords excellent advantages), river gaugings, and laboratory tests of metals, cements, road materials, and hydraulic appliances, beside trips of inspection, and tests at near-by industrial or municipal plants. This close association of theory and practice adds to the interest and progress of the student.

CIVIL ENGINEERING

JUNIOR YEAR

	FIRST TERM		SECOND TERM	
35-2	Qualitative Analysis	2	41-13 Railroad Engineering	3
41-12	Railroad Surveying	3	41-21 Highways	2
41-40	Hydraulics	3	41-43 Hydraulic Measurements	2
45-1	Applied Mechanics	3	45-2 Applied Mechanics	3
45-12	Applied Mechanics Laboratory	1	47-1 Roofs and Bridges	3
51-1	Steam Engine	3	47-3 Structural Design	3
81-2	Economics	3	81-2 Economics	3
	Total	18	Total	19
	Electives		*Electives*	
11-	English		11- English	
14-	Mathematics		14- Mathematics	
61-3	Dynamo-Electric Machinery	3	51-3 Thermodynamics	3
64-	Mineralogy			

SENIOR YEAR

	FIRST TERM		SECOND TERM	
41-14	Railroad Engineering	3	41-48 Sewerage	3
41-46	Water Supplies	3	41-63 Contracts	3
45-3	Structural Mechanics	3	41-99 Thesis	3-5
	Total	9	Total	9-11
	Electives		*Electives*	
11-	English		11- English	
41-1	Mathematics		14- Mathematics	
[17-1	Spanish	3]	[17-1 Spanish	3]
35-18	Chemistry of Road-building Materials	3	35-18 Chemistry of Road-building Materials	3
41-31	Geodesy	2	41-17 Railroad Economics	3
41-47	Water Power Engineering	3	41-51 Fire Protection Engineering	2
41-95	Civil Engineering Topics	2	47-2 Theory of Structures	3
47-7	Bridge Design	3	47-8 Structural Design	2
61-3	Dynamo-Electric Machinery	3	54- Geology	
64-	Mineralogy		61-10 Electrical Laboratory	2
66-	Economics		66- Economics	

STRUCTURAL ENGINEERING

The course of instruction in Structural Engineering is arranged so as to afford the student a comprehensive training in the fundamentals of civil engineering construction, and leads to the degree of Bachelor of Science in Civil Engineering. In addition to the subjects of the first two years, the course includes, as prescribed subjects, applied mechanics; testing of the materials of construction; stresses in framed structures; design of masonry and reinforced concrete structures and foundations; the design of buildings and bridges; hydraulics; sanitary engineering; steam engine; railroad surveying and economics. In addition to the prescribed subjects, it is possible for the student to elect courses in English, Spanish, mineralogy, geology, geodesy, contracts, dynamo electric machinery, highways, hydraulic engineering, railroad engineering, and advanced courses in mathematics.

The distinctive work of the course, however, is based upon the principles involved in the theory of structures, and in their design and construction. The study of this subject is commenced at the beginning of the junior year and is carried through two full years without intermission, partly in order to develop the power of concentration by the continued study of a highly mathematical and scientific body of co-ordinated principles, and partly because these same principles happen to be fundamental and therefore necessary for a complete understanding of civil engineering structures.

Special emphasis is laid upon the design by the student of typical structures which are likely to be met in practice. By this means he fixes in mind the principles of mechanics and obtains a truer perspective of their application for stability, safety, and economy of construction. The course is designed as an educational preparation not only for those who expect to follow construction professionally as engineers, but for others who may eventually be connected with public or private works as designers, inspectors or in administrative capacities.

STRUCTURAL ENGINEERING

JUNIOR YEAR

FIRST TERM			SECOND TERM		
35-2	Qualitative Analysis	2	41-43	Hydraulic Measurements	2
41-12	Railroad Surveying	3	45-2	Applied Mechanics	3
41-40	Hydraulics	3	47-1	Roofs and Bridges	3
45-1	Applied Mechanics	3	47-3	Structural Design	3
45-12	Applied Mechanics Laboratory	1	81-2	Economics	3
51-1	Steam Engine	3			
81-2	Economics	3			
	Total	18		Total	14
	Electives			*Electives*	
11-	English		11-	English	
14-	Mathematics		14-	Mathematics	
61-3	Dynamo-Electric Machinery	3	24-2	Electricity and Magnetism	3
			41-13	Railroad Engineering	3
			41-21	Highways	2
			51-3	Thermodynamics	3
			51-13	Mechanics of Machinery	3
			61-10	Electrical Laboratory	2

SENIOR YEAR

FIRST TERM			SECOND TERM		
41-46	Water Supplies	3	47-2	Theory of Structures	3
45-3	Structural Mechanics	3	47-8	Structural Design	2
47-7	Bridge Design	3	47-99	Thesis	3-5
47-95	Structural Topics and Reports	2			
	Total	11		Total	8-10
	Electives			*Electives*	
11-	English		11-	English	
14-	Mathematics		14-	Mathematics	
[17-1	Spanish	3]	[17-1	Spanish	3]
41-14	Railroad Engineering	3	41-17	Railroad Economics	3
41-31	Geodesy	2	41-48	Sewerage	3
41-47	Water Power Engineering	3	41-51	Fire Protection Engineering	2
61-3	Dynamo-Electric Machinery	3	41-63	Contracts	3
64-	Mineralogy		54-	Geology	
66-	Economics		66-	Economics	
			61-10	Electrical Laboratory	2

MECHANICAL ENGINEERING

The course of instruction in mechanical engineering relates particularly to the generation and transmission of power; the design and construction of machinery; the economics of production and labor.

The subject of steam is begun with the Junior year and continued through the Senior year, giving full consideration to the mechanical theory of heat and the properties of steam and gases, based on the preparatory courses in physics and chemistry. It comprises the study of steam engines and boilers, together with their auxiliaries, by text book, laboratory tests, and design. Gas producers, gas engines, and turbines are also given the attention which their importance demands. Both required and elective courses in Electricity are given at the same time, thus giving the student a comprehensive treatment of the power problem.

The subject of mechanism is introduced in the Sophomore year and followed by the mechanics and dynamics of machinery in the Junior and Senior years. These courses are paralleled by laboratory practice and a thorough training in applied mechanics and the testing of materials. The courses in design are closely correlated with the development of theory, and supplemented by shop practice and many inspection trips to the industrial plants in the vicinity,

The third and equally important division of this course is the consideration of problems relating to the manufacture of machinery. This comprises the economic methods of production, and the consideration of labor problems. These subjects will be presented to the prospective engineer in such form as to enable him to comprehend their importance and the principles involved.

The graduate of an engineering school must inevitably lack the mature judgment which can be gained only through the experience of the practicing engineer, but he should have acquired the fundamentals for sound reasoning, precision in expression, and an appreciation of the responsibilities and duties of the professional engineer.

MECHANICAL ENGINEERING

JUNIOR YEAR

FIRST TERM			SECOND TERM		
25-8	Mechanic Arts	3	41-40	Hydraulics	3
35-2	Qualitative Analysis	2	45-2	Applied Mechanics	3
45-1	Applied Mechanics	3	51-3	Thermodynamics	3
45-12	Applied Mechanics Laboratory	1	51-13	Mechanics of Machinery	3
51-1	Steam Engine	3	51-21	Mechanical Engineering Lab.	2
81-2	Economics	3	81-2	Economics	3
	Total	15		Total	17
	Electives			*Electives*	
11-	English		11-	English	
14-	Mathematics		14-	Mathematics	
61-3	Dynamo-Electric Machinery	3	24-2	Electricity and Magnetism	3
			61-10	Electrical Laboratory	2
			61-5	Alt. Current Machinery	3

SENIOR YEAR

FIRST TERM			SECOND TERM		
51-7	Engine Design	3	51-8	Power Plant Design	3
51-15	Dynamics of Machinery	3	51-19	Production Engineering	3
51-17	Machine Design	3	51-29	Mechanical Engineering Lab.	2
51-27	Mechanical Engineering Lab.	4	51-99	Thesis	3-5
	Total	13		Total	11-13
	Electives			*Electives*	
11-	English		11-	English	
44-	Mathematics		14-	Mathematics	
51-47	Water Power Engineering	3	41-51	Fire Protection Engineering	2
61-11	Mech. Engineering Problems	2	41-63	Contracts	3
65-3	Structural Mechanics	2	61-5	Alt. Current Machinery	3
61-95	Mech. Engineering Topics	2	61-10	Electrical Laboratory	2
81-3	Dynamo-Electric Machinery	3	66-	Economics	3
1-21	Dynamo Design D. C	3			
6-	Economics	3			
1-4	Administrative Engineering	3			

ELECTRICAL ENGINEERING

The aim of this course is to lay a broad foundation of Electrical Science upon which the future technical attainments of the electrical engineer may rest.

The purely electrical work extends throughout the junior and senior years; that in the junior year being devoted to the more elementary theory, and the practice of the simpler tests and measurements, while that in the senior year is largely directed to the more advanced study of alternating currents and electrical machinery and to the more complicated tests of the alternating current and dynamo laboratories, and to the consideration of the general problems of Electrical Engineering.

Throughout the course much attention is paid to the numerical solution of electrical problems, as it is believed that in no other way can theory and principles be so quickly and so clearly comprehended. A considerable amount of time is given to the design of electrical apparatus and machinery and many students during their course construct or assist in the construction of some instrument or piece of electrical machinery of commercial finish and dimensions.

The graduates of this course are advised to spend a couple of years in the apprenticeship courses or testing departments of the large electrical manufacturing companies in order that they may get an intimate practical acquaintance with electrical apparatus and experience in handling and operating heavy machinery.

Everywhere the attempt is made to present the data and methods of Electrical Engineering by the scientific development of physical principles, it being assumed that the empirical side of the profession may best be acquired by practice after graduation.

ELECTRICAL ENGINEERING

JUNIOR YEAR

FIRST TERM			SECOND TERM		
35-2	Qualitative Analysis	2	41-40	Hydraulics	3
45-1	Applied Mechanics	3	45-2	Applied Mechanics	3
45-12	Applied Mechanics Laboratory	1	61-4	Electrical Laboratory	4
51-1	Steam Engine	3	61-5	Alt. Current Machinery	3
61-3	Dynamo-Electric Machinery	3	81-2	Economics	3
81-2	Economics	3			
	Total	15		Total	16
	Electives			*Electives*	
11-	English		11-	English	
14-	Mathematics		14-	Mathematics	3
25-8	Mechanic Arts	3	24-2	Electricity and Magnetism	3
			51-3	Thermodynamics	3
			51-13	Mechanics of Machinery	3
			51-21	Mechanical Engineering Lab.	2

SENIOR YEAR

FIRST TERM			SECOND TERM		
61-7	Dynamo Laboratory	4	61-16	Electrical Engineering	3
61-11	Alternating Currents	3	61-99	Thesis	3-5
61-15	Electrical Engineering	3		Total	6-8
61-21	Dynamo Design D. C.	3			
	Total	13			
	Electives			*Electives*	
11-	English		11-	English	
14-	Mathematics		14-	Mathematics	
[17-1	Spanish	3]	[17-1	Spanish	3]
25-8	Mechanic Arts	3	41-63	Contracts	3
41-47	Water Power Engineering	3	61-22	Dynamo Design A. C.	3
45-3	Structural Mechanics	3	61-95	Electrical Topics	3
51-17	Machine Design	3	66-	Economics	
61-17	Telephone and Telegraph	3			
66-	Economics				

CHEMICAL ENGINEERING

The course in Chemical Engineering covers a period of four years, and leads to the degree of Bachelor of Science in Chemical Engineering.

The subjects in this course have been arranged to give the training in mathematics, physics, chemistry, and mechanical and electrical engineering that will assist the graduates of the department in solving the mechanical, electrical and chemical problems that present themselves when chemistry is applied in practical ways. Subjects intended for general training, the greater part of the pure mathematics, and the less technical engineering subjects have purposely been introduced early in the course. This arrangement allows much time for the study of subjects in chemistry and advanced engineering in the last two years. The mathematical, physical, and general engineering subjects, as well as subjects that are intended for general culture, correspond, for the most part, to those of the course in mechanical and electrical engineering.

In chemistry the subjects are numerous enough to train the student thoroughly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the different branches of chemical analysis, and to make him familiar with many of the practical applications of chemistry. The chemical and engineering subjects are taught, so far as it is possible, in the laboratories, and excursions are made from time to time to plants where technical chemical operations are performed.

Young men who graduate from the course in chemical engineering find employment in constructing and operating plants where chemistry is applied commercially, such as gas-works, dye-works, bleacheries, paper and pulp mills, acid and alkali manufactories.

CHEMICAL ENGINEERING

JUNIOR YEAR

	First Term			Second Term	
35-2	Qualitative Analysis	2	35-3	Qualitative Analysis	2
35-4	Quantitative Analysis	3	35-4	Quantitative Analysis	3
35-10	Organic Chemistry	4	35-10	Organic Chemistry	4
45-1	Applied Mechanics	3	41-40	Hydraulics	3
45-12	Applied Mechanics Laboratory	1	45-2	Applied Mechanics	3
51-1	Steam Engine	3	81-2	Economics	3
81-2	Economics	3			
	Total	19		Total	18
	Electives			*Electives*	
11-	English		11-	English	
14-	Mathematics		14-	Mathematics	
	German 15 or 22	3		German 15 or 22	
			24-2	Electricity and Magnetism	3
			61-10	Electrical Laboratory	2

SENIOR YEAR

	First Term			Second Term	
35-5	Quantitative Analysis	3	35-5	Quantitative Analysis	3
35-9	Gas Analysis	1	35-7	Fire Assay	8
35-11	Theoretical Chemistry	3	35-8	Metallurgy	2
35-17	Applied Chemistry	3	35-11	Theoretical Chemistry	5
61-3	Dynamo-Electric Machinery	3	35-17	Applied Chemistry	2
			35-99	Thesis	3-3
	Total	13		Total	16-13
	Electives			*Electives*	
11-	English		11-	English	
14-	Mathematics		14-	Mathematics	
	German 15 or 22	3		German 15 or 22	
[17-1	Spanish	3]	[17-1	Spanish	3]
41-46	Water Supplies	3	41-48	Sewerage	3
54-	Geology		54-	Geology	
64-	Mineralogy		61-10	Electrical Laboratory	2
66-	Economics		66-	Economics	

Index to Subjects

No.	Term Hours	Subject
		11 ENGLISH
11-1	3	English (First Term)
11-2	3	English (Second Term)
11-4	2	Narration
11-5	3	General English Literature
11-6	2	English Literature. 19th Century
11-7	2	Advanced English Literature
11-8	2	Technical Exposition
11-9	2	Technical Theses
11-13	3	Argumentation
		13 FRENCH
13-1	*6	French
13-2	*6	French
13-3	3	French
13-4	3	French
13-6	3	French
		15 and 22 GERMAN
22-1	*6	German
15-2	*6	German
22-3	*6	German
		17 SPANISH
17-1	*6	Spanish
		21 DRAWING
21-1	5	Drawing
21-5	3	Descriptive Geometry
21-8	3	Drawing
21-13	3	Mechanism
		25 MECHANIC ARTS
25-1	3	Pattern Making
25-8	3	Metal Work
		29 MATHEMATICS
29-1	3	Computation
29-2	3	Analytical Geometry and Algebra
29-3	3	Freshman Calculus
29-4	3	Sophomore Calculus
29-5	3	Sophomore Calculus
		31 PHYSICS
31-1	3	Mechanics and Sound
31-2	3	Electricity and Magnetism, and Light
31-3	3	Mechanics and Heat
31-7	§3	Physical Laboratory
24-2	3	Electricity and Magnetism
		35 CHEMISTRY
35-1	*6	General Inorganic Chemistry
35-2	2	Qualitative Analysis
35-3	2	Qualitative Analysis, Advanced
35-4	*6	Quantitative Analysis
35-5	*6	Quantitative Analysis, Technical
35-7	2	Fire Assay
35-8	2	Metallurgy of Iron and Steel
35-9	1	Technical Gas Analysis
35-10	‖8	Organic Chemistry
35-11	*6	Theoretical Chemistry
35-17	*6	Applied Chemistry
35-18	*6	Chemistry of Road-building Materials
35-99	3-5	Chemical Engineering Thesis
		41 CIVIL ENGINEERING
41-3	†3	Surveying
41-12	3	Railroad Surveying
41-13	3	Railroad Engineering
41-14	3	Railroad Engineering
41-17	3	Railroad Engineering Economics
41-21	2	Highways and Cements
41-31	2	Geodesy
41-40	3	Hydraulics
41-43	2	Hydraulic Measurements
41-46	3	Water Supplies
41-47	3	Water Power Engineering
41-48	3	Sewerage
41-51	2	Fire Protection Engineering
41-63	3	Contracts
41-95	2	Civil Engineering Topics
41-99	3-5	Civil Engineering Thesis
		45 APPLIED MECHANICS
45-1	3	Applied Mechanics
45-2	3	Applied Mechanics
45-3	3	Structural Mechanics
45-12	1	Applied Mechanics Laboratory
		47 STRUCTURAL ENGINEERING
47-1	3	Roofs and Bridges
47-2	3	Theory of Structures
47-3	3	Structural Design, Elementary
47-7	3	Bridge Design
47-8	2	Structural Design, Advanced
47-95	2	Structural Topics and Reports
47-99	3-5	Structural Engineering Thesis
		51 MECHANICAL ENGINEERING
51-1	3	Steam Engine
51-3	3	Thermodynamics
51-7	3	Engine Design
51-8	3	Power Plant Design
51-11	2	Mechanical Engineering Problems
51-13	3	Mechanics of Machinery
51-15	3	Dynamics of Machinery
51-17	3	Machine Design
51-19	3	Production Engineering
51-21	2	Mechanical Engineering Laboratory
51-27	4	Mechanical Engineering Laboratory

* Two terms; three term hours each.
† Two terms; first term, one term hour; second term, two term hours.
‖ Two terms; four term hours each.
§ Two terms; first term, two term hours; second term, one term hour.

51 Mechanical Engineering (Continued)

51-29	2	Mechanical Engineering Laboratory
51-95	2	Mechanical Engineering Topics
51-99	3-5	Mechanical Engineering Thesis

54 GEOLOGY

54-1	3	Physical Geology and Geography
54-3	*6	Mathematical Problems in Geology
54-4	3	Field Geology
54-21	1	Physical Geography and Meteorology
54-22	2	Physical Geology
54-23	1	Economic Geology
54-24	2	Historical Geology

61 ELECTRICAL ENGINEERING

61-3	3	Dynamo-Electric Machinery
61-4	4	Electrical Laboratory
61-5	3	Alternating Current Machinery
61-7	4	Dynamo Laboratory
61-10	2	Electrical Laboratory
61-11	3	Alternating Currents
61-15	3	Electrical Engineering
61-16	3	Electrical Engineering
61-17	3	Telephone and Telegraph
61-21	3	Dynamo Design, D. C.
61-22	3	Dynamo Design, A. C.
61-95	3	Electrical Topics
61-99	3-5	Electrical Engineering Thesis

64 MINERALOGY

64-1	3	Mineralogy and Lithology
64-2	3	Crystallography and Descriptive Mineralogy

81 POLITICAL ECONOMY

81-2	*6	Elements of Economics
81-4	3	Adminstrative Engineering
66-5	3	Money, Credit, and Banking
66-16	3	Modern Labor Problems
66-17	3	Industrial Organization and Management

*Two terms; three term hours each.

Examination Group System

The courses are divided into six groups. Each of these groups has assigned to it three periods of four days each for each half year, during which periods all announced examinations in the courses of that group are given. These examinations are limited to the time assigned to these subjects on the program.

Composition of groups and periods allotted to each are as follows:

FIRST HALF-YEAR

Subject	Group	Subject	Group	Subject	Group	Subject	Group
11-1	5	29-1	1	41-3	5	51-7	6
11-5	3	29-2	2	41-12	4	51-11	4
11-7	3	29-4	2	41-14	5	51-15	1
11-9		31-2	6	41-31	4	51-17	3
11-13	5	31-7	3	41-40	5	51-27	5
13-1	3	35-1	1	41-46	6	51-95	3
13-2	6	35-2	4	41-47	2	61-3	5
13-3	3	35-4	1	41-95	3	61-7	5
15-2	6	35-5	1	45-1	1	61-11	6
21-1	6	35-9	4	45-3	1	61-15	3
21-8	4	35-10	5	45-12	3	61-17	2
22-1	6	35-11	5	47-7	2	61-21	4
22-3	6	35-17	3	47-95	3	81-2	6
25-8	4	35-18		51-1	2	81-4	2

Group 1.	Oct. 18, 19, 20, 21.	Nov. 15, 16, 17, 18.	Jan. 5, 6, 8, 9.
" 2.	Oct. 23, 24, 25, 26.	Nov. 20, 21, 22, 23.	Jan. 10, 11, 12, 13.
" 3.	Oct. 27, 28, 30, 31.	Nov. 24, 25, 27, 28.	Jan. 15, 16, 17, 18.
" 4.	Nov. 1, 2, 3, 4.	Dec. 6, 7, 8, 9.	Jan. 19, 20, 22, 23.
" 5.	Nov. 6, 7, 8, 9.	Dec. 11, 12, 13, 14.	Jan. 24, 25, 26, 27.
" 6.	Nov. 10, 11, 13, 14.	Dec. 15, 16, Jan. 3, 4.	Jan. 29, 30, 31, Feb. 1.

Final Examinations February 2, 3, 5, 6, 7.

SECOND HALF-YEAR

Subject	Group	Subject	Group	Subject	Group	Subject	Group
11-2	5	29-5	2	41-13	4	51-8	6
11-4	5	31-1	1	41-17	5	51-13	5
11-6	3	31-3	4	41-21	3	51-19	4
11-8	3	31-7	3	41-40	6	51-21	3
13-1	3	35-1	1	41-43	5	51-29	5
13-2	6	35-3	6	41-48	4	61-4	4
13-4	3	35-4	1	41-51	2	61-5	2
15-2	6	35-5	1	41-63	1	61-10	2
21-5	4	35-7	6	45-2	1	61-16	4
21-13	6	35-8	4	47-1	6	61-16	4
22-1	6	35-10	5	47-2	6	61-22	5
22-3	6	35-11	5	47-3	2	61-95	3
25-1	6	35-17	3	47-8	3	81-2	6
29-3	2	41-3	5	51-3	4		

Group 1.	Mar. 4, 5, 6, 7.	Apr. 1, 2, 3, 4.	May 10, 11, 12, 13.
" 2.	Mar. 8, 9, 11, 12.	Apr. 5, 6, 8, 9.	May 15, 16, 17, 18.
" 3.	Mar. 13, 14, 15, 16.	Apr. 10, 11, 12, 13.	May 20, 21, 22, 23.
" 4.	Mar. 18, 19, 20, 21.	Apr. 26, 27, 29, 30.	May 24, 25, 27, 28.
" 5.	Mar. 22, 23, 25, 26.	May 1, 2, 3, 4.	May 29, 31, June 1, 3.
" 6.	Mar. 27, 28, 29, 30.	May 6, 7, 8, 9.	June 4, 5, 6, 7.

Final examinations, June 8, 10, 11, 12, 13.

Departments of Instruction

11 ENGLISH

The aim of the department of English is, first, to teach the student to think accurately and to give adequate written and spoken expression to his own experience; second, to broaden his outlook.

In addition to the class work, papers in other subjects will also be examined by the instructors in English, as a test of the student's ability to express himself correctly and clearly; and theses, as far as possible, will be subject to criticism by the instructors in English before they are finally accepted by the department for which they are written.

English Subjects are Open for Election as Follows:

	First Term	*Second Term*
Sophomore year	11-13 11-5 11-7 (with permission of instructors)	11-4 11-6 11-8
Junior year	11-13 11-5 11-7 11-9 (must be preceded by 11-8)	11-4 11-6 11-8 11-9 (must be preceded by 11-8)
Senior year	11-13 11-5 11-7 11-9	11-4 11-6 11-8 11-9

11-1 English. A study of the elemental forms of literary and scientific writing: description, exposition, directions, criticism, argument, and narration, with the ultimate aim of helping the student to think for himself. Reading of illustrative literature. *Four periods a week: one lecture, two recitations, and one ten-minute conference.*

First term. Four term hours.

MR. SEAVEY, PROFESSOR EARLE and MR. GOTT

11-2 English. A study of actual problems in literary expression. Reading in general science and literature under the guidance of weekly lectures. *Four periods a week: one lecture, two recitations, and one ten-minute conference. Preparation, 11-1.*

Second term. Three term hours.

MR. SEAVEY, PROFESSOR EARLE and MR. GOTT

*11-4 **English.** An advanced subject in general composition, including the writing of daily and fortnightly themes. *Three periods a week: two recitations, and one ten-minute conference. Preparation, 11-2 or 12-2.*

Second term. Two term hours. PROFESSOR EARLE and MR. GOTT

11-5 **English.** A brief survey of English literature and history, from the beginnings to about 1750, aiming to broaden the student's appreciation of what he may get from books, and to suggest ways in which the past throws light on the problems of the present. *Four periods a week: three lectures and one ten-minute conference. Preparation, 11-2.*

First term. Three term hours. PROFESSOR EARLE and MR. GOTT

11-6 **English.** A study of some of the most important literary and scientific developments of the nineteenth century. *Four periods a week: three lectures and one ten-minute conference. Preparation, 11-2.*

Second term. Two term hours. MR. SEAVEY and MR. GOTT

11-7 **English.** Advanced English literature. A study of some author, period, or type. The definite work to be carried on will be outlined by the instructor in charge each June for the following term. *Two periods a week: one recitation and one thirty-minute conference. Preparation, 11-6.*

First term. Two term hours. PROFESSOR EARLE

11-8 **English.** A detailed study of the most important problems of technical writing. *Four periods a week: two recitations and two ten-minute conferences. Preparation, 11-2.*

Second term. Two term hours. PROFESSOR EARLE and MR. GOTT

11-9 **English.** An advanced subject in technical composition. No class meetings; each student writes papers from ten to fifty pages in length under the individual direction of the instructor. The subjects are taken, as far as possible, from technical work previously done by the student outside of college, or from special research. *One thirty-minute conference a week. Preparation, 11-8.*

First term; repeated in second term. Two term hours.

PROFESSOR EARLE

*11-13 **English.** Argumentative composition adapted to meet the special needs of engineers. *Three periods a week: two recitations and one ten-minute conference. Preparation, 11-2 or 12-2.*

First term. Three term hours. MR. SEAVEY and MR. GOTT

MODERN LANGUAGES

Students who have fulfilled the entrance requirement in foreign language are required to pursue in the Freshman year a course in a modern language under the following conditions:

* Open to students in the School of Liberal Arts as well as to students in the Engineering School.

Those receiving credit in an ancient language only will enter French 13-1.

Those receiving elementary credit in French or German only will continue that language during the Freshman year.

Those receiving credit for Intermediate French or German only may continue the language offered for one year, or begin the other.

Those receiving elementary credit in both French and German may continue either language during the Freshman year.

Those receiving intermediate credit in one language, and elementary credit in the other, may continue either for one year. They are recommended to select that in which elementary credit only is received. Those who receive intermediate credit in French, and elementary credit in German, may, with the consent of the department, take Spanish in the Freshman year.

Those receiving elementary and intermediate credit in both languages may take either for one year, or each for a half-year; or Spanish, with the consent of the department.

13 FRENCH

The aim of the work in French is the acquisition of a knowledge of the language not only for its educational value in general but for its bearing on the student's mother tongue. The scientific reading is chosen, as far as possible, for its direct application to technical subjects which are being studied at the same time. Care and accuracy in translation are emphasized. Although no extensive attempt is made to give the student a ready speaking knowledge of the language, he is trained to understand it when spoken. Careful attention is paid to pronunciation, and to the acquisition of a vocabulary of every-day expressions and idioms which will enable him, in case of foreign residence, to acquire rapidly a correct and fluent command of the spoken tongue. Students are encouraged to do outside reading for their own pleasure, in addition to the class-room requirements. The college Library contains a large assortment of representative works suited for this purpose.

13-1 French. Elementary course. The essentials of grammar, with composition; Grandgent's Grammar; a French Reader; reading of short works of modern authors in prose and verse. Open to Freshmen whose entrance language is Latin, Greek, or Advanced German. It must be followed by 13-2 in the Sophomore year. *First term, five recitations a week; second term, four recitations a week.*

First and second terms. Six term hours. MR. GREENE

13-2 French. Reading of modern fiction, and scientific works related to the technical and scientific studies of the Freshman year. Review of grammatical principles; vocabulary practice. *Three recitations a week. Preparation, elementary entrance credit in French, or 13-1.*

First and second terms. Six term hours. PROFESSOR HAYDEN

13-3 French. Selected works of the nineteenth century; scientific reading; composition; conversation. *Three recitations a week. Preparation, intermediate entrance credit in French, or 13-2.*

First term. Three term hours. MR. GREENE

13-4 French. Reading of selected types of French literature; composition; conversation. *Three recitations a week. Preparation, 13-2 or its equivalent.*

Second term. Three term hours. MR. GREENE

13-6 French. Advanced reading of historical, critical, and dramatic works. *Three recitations a week. Preparation, 13-3 or its equivalent.*

Second term. Three term hours. PROFESSOR HAYDEN

(13-6 French will not be given unless a reasonable number of thoroughly qualified students elect it.)

15 and 22 GERMAN

The aim and scope of the work in German are in general the same as in French, and the student is referred to the statement of that department.

22-1 German. Elementary course. The essentials of grammar; reading of modern prose; dictation and composition. Open to Freshmen who have received credit in Advanced French for admission. It must be followed by 15-2 in the Sophomore year. *Three recitations a week.*

First and second terms. Six term hours. ASSISTANT PROFESSOR REED

15-2 German. Review of grammatical principles, especially with reference to syntax. Reading of modern works, including one work dealing with a scientific subject. Dictation and composition. *Three recitations a week. Preparation 22-1 or Elementary German for admission.*

First and second terms. Six term hours. ASSISTANT PROFESSOR REED

22-3 German. (First term.) The rapid reading of modern prose in contemporary authors. (Second term.) Introduction to the classic authors: Lessing, Minna von Barnhelm; Schiller, Die Jungfrau von Orleans; Goethe, Hermann und Dorothea. *Three recitations a week. Preparation, 15-2, or intermediate German for admission. Six term hours. Either half of the subject may be taken, counting as three term hours.*

PROFESSOR FAY

17 SPANISH

The aim of the single subject offered in Spanish is to enable the student to read without serious difficulty ordinary Spanish prose. Due attention is paid to the essentials of grammar as a means to this end, and to pronunciation. Simple English sentences are translated into Spanish. The importance of French as a preparation for this subject is emphasized.

[17-1 **Spanish.** Elementary course. The essentials of grammar; reading of modern prose; practice in writing Spanish. Open to those who have received a grade of C or higher in French 13-2, 13-3 or 13-4. All others wishing to elect the subject should consult the instructor. *Three recitations a week.*

First and second terms. Six term hours. ——— ———]

21 DRAWING

The department of Drawing aims to give a broad and exact training in the language of graphics; to teach the principles of its construction, its technique, and the art of expression by this medium. It is designed to give the student such practice as shall enable him to use this language with fluency whenever and wherever it may serve better than a written or spoken language. The work of the department also includes practice in the use of graphics for the solution of problems relating to the theory of mechanism and its application to machine design.

21-1 Drawing. The course in Freshman Drawing comprises exercises in the proper use and care of drafting tools; numerous problems in geometrical construction; a thorough study of the principles of orthographic projection, freehand and mechanical perspective, isometric solids. Considerable time is devoted to the freehand sketching of simple parts of machinery and the careful completion of drawings from these sketches. Throughout the course special attention is given to lettering and the com-

position of titles. *First term, three periods a week of three hours each, and two periods a week of two hours each.*

First term. Five term hours.

ASSISTANT PROFESSOR ASHLEY and MR. CARROLL

21-5 Descriptive Geometry. A course comprising the study of principles and their applications, by the solution of a large number of graded problems in which theory and practice are correlated. *Three periods a week; two hours each.*

Second term. Three term hours.

ASSISTANT PROFESSOR ASHLEY and MR. CARROLL

21-8 Drawing. A study of the technique of graphic expression and its application in giving complete and accurate information to the constructor. Detailed and assembly drawings are made from freehand sketches and other data, but nothing in the nature of a copy is permitted. The work is conducted according to the methods of progressive draftsmen, the greatest emphasis being laid on completeness and accuracy in the use of graphic language. *Three periods a week; two hours each. Preparation, 21-1.*

First term. Three term hours. MR. SVENSEN

21-13 Mechanism. An introductory course, conducted mainly by graphical methods, and dealing with the fundamental laws governing the velocity ratio and paths of mechanical movements and their application to velocity diagrams, simple types of gearing, and other modes of transmission. *Three periods a week; two hours each. Preparation, 21-1.*

Second term. Three term hours.

ASSISTANT PROFESSOR ASHLEY and MR. CARROLL

25 MECHANIC ARTS

Work in the shops is designed to give a practical knowledge of mechanical processes and of the materials of construction. By means of lectures, practical illustrations, actual work in the shops and visits to manufacturing plants the student comes in contact with the most approved methods and processes in engineering practice. In the shops a series of graded exercises is given, having in view the formation of habits of precision and the development of judgment essential to the engineer.

During the Senior year the knowledge of shop methods already gained is put to actual test in the development of Shop Problems which are carried on under "Production Engineering." The student investigates shop conditions in certain plants as to economical and practical methods of production.

It is intended that work in the shop shall always maintain a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shop, from drawings prepared in the drafting-room.

25-1 **Pattern Making.** Practice is given in the use of bench wood-working tools and the wood-turning lathe for the construction of simple patterns from working drawings. A set of graded exercises leads from simple to the more complicated patterns and core boxes. The methods and principles of foundry practice are introduced in the early part of the course. Much time is spent in the study of working drawings to develop the student's ability to apply the best pattern making and foundry practice, and to understand their relation to shop and drafting room. Visits are made to the shops of large manufacturing plants. *Three periods per week; two three-hour, one two-hour, and one lecture.*

Second term. Three term hours.

ASSISTANT PROFESSOR STEWART and MR. ADAMS

25-8 **Metal Work.** This course is introduced by work at the forge in bending, drawing, upsetting, welding, tool-dressing, etc., followed by work at the vice in chipping, filing, and fitting. Lathe work, including straight and taper turning, chucking, boring, reaming, and thread cutting; also drilling, planing, shaper and milling-machine work. *Three periods per week; three hours each.*

First term. Three term hours.

ASSISTANT PROFESSOR STEWART and MR. ADAMS

29 MATHEMATICS

The instruction in mathematics is arranged so that fundamental principles of trigonometry, analytics, and calculus may come as early as possible in the course, the more advanced parts of each subject being introduced later. A review of algebra runs through the first year in appropriate connection with topics in the other subjects. The prescribed work continues to the end of the Sophomore year, double time being given to mathematics in the first term of the Freshman year. Seniors and Juniors may elect higher courses in the School of Liberal Arts.

29-1 **Computation.** Right and oblique triangles and vector sums. Trigonometric equations and identities. Arrangement of computations rounding-off processes, use of logarithms and slide rules. Solution of

equations by successive approximations. *Three periods a week; two hours each. Simultaneous with 29-2.*

First term. Three term hours.

PROFESSOR RANSOM, MR. DILLINGHAM, and MR. BRAY

29-2 **Analytical Geometry and Algebra.** Co-ordinate systems, straight lines, circles and conic sections. Simultaneous equations, quadratics, variation. Tangents, loci, parameters, lines, planes, and surfaces in space. *Three hours a week. Simultaneous with 29-1.*

First term. Three term hours.

PROFESSOR RANSOM and MR. DILLINGHAM

29-3 **Freshman Calculus.** Fundamental principles. Algebraic differentials and integrals. Differential and integral rate problems. Maxima and minima. Transcendental functions. Areas. *Three hours a week. Preparation, 29-1 and 29-2.*

Second term. Three term hours.

PROFESSOR RANSOM and MR. DILLINGHAM

29-4 **Sophomore Calculus.** Spherical trigonometry and three dimensional analytics. Expansions, approximations, and errors by Taylor's Theorem. Integration as summation. *Three hours a week. Preparation, 29-3.*

First term. Three term hours.

PROFESSOR RANSOM and MR. DILLINGHAM

29-5 **Sophomore Calculus.** Formal and approximate integration. Multiple integrals. Centroids and moments. Elements of differential equations. *Three hours a week. Preparation, 29-4.*

Second term. Three term hours.

PROFESSOR RANSOM and MR. DILLINGHAM

31 PHYSICS

This science is presented, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, from which all the various phenomena are deducible. In each branch there are frequent returns to these first principles.

In the laboratory, students are given a syllabus of the work for a guide. This syllabus is supplemented by Glazebrook's Physical Optics; Kaulrausch's Measurements; Stewart and Gee's Practical Physics, vols. 1 and 2; Glazebrook and Shaw's Practical Physics; Nichol's Laboratory Manual, vols. 1 and 2; and Watson's Practical Physics. In addition to the experimental and note-book work, many problems are solved.

31-1 **Mechanics and Sound.** This is introductory to all other subjects offered by the department. *Three periods a week, lectures and recitations.*

Second term. Three term hours.

PROFESSOR H. G. CHASE, MR. SHRADER, and MR. BECKER

31-2 **Electricity and Magnetism, and Light.** *Three periods a week, lectures and recitations. Preparation, 31-1.*

First term. Three term hours.

PROFESSOR H. G. CHASE, MR. SHRADER, and MR. BECKER

31-3 **Mechanics and Heat.** *Three periods a week. Preparation, 31-2*

Second term. Three term hours.

PROFESSOR H. G. CHASE, MR. SHRADER, and MR. BECKER

31-7 **Physical Laboratory.** *First term, two periods a week; three hours each. Second term, one three-hour period.*

First and second terms. Three term hours.

MR. SHRADER, MR. BECKER, and MR. KNIGHT

35 CHEMISTRY

35-1 **General Inorganic Chemistry.** An introductory course in theoretical and descriptive inorganic chemistry, with a thorough consideration of the simplest carbon compounds and principal technical processes. *Three periods a week, two lectures, one three hour laboratory period with conferences.*

First and second terms. Six term hours.

PROFESSOR DURKEE, ASSISTANT PROFESSOR COBB, MR. BAKER, and ASSISTANTS

35-2 **Qualitative Analysis** for the detection of the metals, a course which includes the experimental development of schemes for the division of the metals into groups, the separation and detection of the metals in each group, — a study of all the chemical changes and analytical details, together with the correct analysis of six known solutions and thirteen unknown. *Two periods a week; three hours each; laboratory work and conference. Six lectures.*

First term. Two term hours.

PROFESSOR DURKEE, MR. BAKER, and ASSISTANTS

35-3 **Qualitative Analysis, Advanced,** dealing with methods to effect solution of solids, the detection of mineral and common organic acids, the complete analysis of inorganic solids, including mixtures of salts, minerals, alloys, and slags. Three known and thirteen unknown are required, and thorough study of the chemical changes and conditions involved in the analyses. *Two periods a week; three hours each; laboratory work and conference.*

Second term. Two term hours. MR. BAKER

35-4 **Quantitative Analysis.** Theory and practice of gravimetric and volumetric analysis, including the determination of chlorine by the ordi-

nary and Gooch crucible methods, iron and sulphur in furous ammonium sulphate, silica in a silicate, phosphorus in a phosphate, complete analysis of dolomite, and brass, preparation of strictly half-normal sodium hydroxide and hydrochloric acid solutions, the volumetric analyses of soda ash and oxalic acid, the analysis of iron ore by the dichromate and permanganate methods, determination of chromium in chromite, of antimony by the iodine method, and silver by the sulphocyanate method. *Three periods a week; three hours each; laboratory work and conference.*

First and second terms. Six term hours. PROFESSOR DURKEE

35-5 **Quantitative Analysis.** Technical. Work varied somewhat to meet the needs of individual students. Course ordinarily comprises proximate analysis of coal, nitrogen in coal, by Kjeldahl's method, complete analysis of boiler scale, mineral and sanitary analysis of water, determination of copper in ores by iodine and cyanide methods, of zinc by ferro-cyanide method, complete analysis of Babbitt metal, determination of lead in ores, and manganese, sulphur, phosphorus, silicon and carbon in iron and steel. *Three periods a week; three hours each; laboratory work and conference.*

First and second terms. Six term hours. PROFESSOR DURKEE

35-7 **Fire Assay.** A course which deals with the theory and practice of sampling and assaying gold and silver ores. *Two periods a week; three hours each; laboratory work and conference.*

Second term. Two term hours. PROFESSOR DURKEE

35-8 **Metallurgy of Iron and Steel.** Considered largely from the chemical side, and includes the study of ores, fluxes, fuels, furnaces, and the other mechanical devices used in the commercial production of pig iron, wrought iron, and steel, together with the solution theory of iron and steel, heat treatment of steel, and production of malleable cast iron. *Two periods a week; one hour each; lectures and recitations.*

Second term. Two term hours. PROFESSOR DURKEE

35-9 **Technical Gas Analysis,** by the Orsat, Elliot, and Hempel systems. *One period a week, of three hours.*

First term. One term hour. PROFESSOR DURKEE and ASSISTANT

35-10 **Organic Chemistry.** This course consists of lectures, recitations, and laboratory work. It is intended to familiarize the student with the typical compounds of carbon and their more important derivatives. The work in the laboratory includes the preparation of certain of the more important substances referred to in the lectures, and the identification of certain classes of compounds. *Four periods a week; three lectures; one three-hour laboratory period.*

First and second terms. Eight term hours.

ASSISTANT PROFESSOR COBB

35-11 **Theoretical Chemistry.** The subject matter of this course consists largely of the principles usually included under the head of Physical Chemistry. The work in the laboratory consists of physical chemical measurements and experiments of a physical chemical nature. *Three periods a week, two lectures, one three-hour laboratory period.*

First and second terms. Six term hours. ASSISTANT PROFESSOR COBB

35-17 **Applied Chemistry.** A course dealing with the most important applications of inorganic and organic chemistry to manufacturing purposes, such as the production of sulphuric acid, soda, illuminating gas, and sugar. *Three periods a week. Two lectures or recitations, and one three-hour laboratory period.*

First and second terms. Six term hours. PROFESSOR DURKEE

35-18 **Chemistry of Road-building Materials.** The origin, production, refining, and chemical analysis of tars, asphalts, petroleum and coal tar oils, Portland and other cements. The course is designed for advanced students in highway engineering, and should fit them for efficient service in cement laboratories and cement plants, and for testing the bituminous materials now so widely applied to road surfaces. *Two three-hour laboratory periods and one recitation per week. Preparation, 41-21, 35-1, and 35-2.*

First and second term. Six term hours. PROFESSOR DURKEE

35-99 **Chemical Engineering Thesis.** The development of a Chemical Engineering problem by extended personal research.

Second term. Three to five term hours.

PROFESSOR DURKEE and ASSISTANT PROFESSOR COBB

41 CIVIL ENGINEERING

41-3 **Surveying.** In this course each student obtains field practice with transit, level and plane table; also, an office drill in plotting and in surveying computations. The problems that are selected for both field and office are intended to illustrate general surveying principles and are considered to be well adapted to the needs of engineers in all courses. They include surveying problems that are incident to building construction and the installation of machinery, as well as problems that occur in ordinary surveys for topography and for area. Text-books principally used; Plane Surveying, by Tracey, and Topographical Drawing, by Daniels. *One three-hour period a week, first term; two three-hour periods a week, second term. Preparation, 29-1.*

First and second terms. Total, three term hours. MR. PAYROW

41-12 **Railroad Surveying.** The reconnoissance and preliminary survey of a proposed line of railroad; determination and location of curves that would be required; plotting of survey notes; computation of curves;

estimates of materials for construction; completion of all drawings; final report on the advisability of the proposed line. Text books: Field Engineering, by Searles; Railroad Location, Surveys and Estimates, by Lavis. *Three periods a week; three hours each. Preparation, 41-3.*

First term. Three term hours. MR. CONNER

41-13 **Railroad Engineering.** A comprehensive treatment of railroad curves and spirals; the study of trestles, culverts, tunnels, track elevation, repair shops, and miscellaneous railroad structures. *Three periods a week; one hour each. Preparation, 41-12.*

Second term. Three term hours. MR. CONNER

41-14 **Railroad Engineering.** A recitation course comprising the study of track materials and track work, frogs and switches, yard and terminal layouts, signaling and interlocking, equipment and tools, and general railroad maintenance. The student is required to lay out and design a proposed siding. *Three periods a week; one hour each. Preparation, 41-13.*

First term. Three term hours. MR. CONNER

41-17 **Railroad Engineering Economics.** Lectures and recitations on the economic principles of railroad location and operation; discussions on grade and alignment revisions, double-tracking and general improvements. *Three periods a week; one hour each. Preparation, 41-14.*

Second term. Three term hours. MR. CONNER

41-21 **Highways and Cements.** The construction of modern paved streets; problems of road maintenance; tests of wearing and cementing qualities of trap rocks: abrasion test of paving brick; standard tests of Portland cements; proportioning of concrete; road-building properties of asphaltic oils, and other bituminous materials, their examination and application in recent practice. *One recitation and one three-hour laboratory period per week.*

Second term. Two term hours. ——— ———

41-31 **Geodesy.** The determination of a true meridian by star and solar observations, accurate measurement of a base line, of angles in a triangulation system, and the adjustment of observations by the method of least squares. *Two periods a week; three hours each. Preparation, 41-3.*

First term. Two term hours. MR. CONNER

41-40 **Hydraulics.** Theoretical and Applied, including the laws that relate to the pressure and flow of water in pipes, the discharge through weirs, tubes, and canals, together with a treatment of the elementary principles of water turbines. Text book: A Treatise on Hydraulics, by Merriman. *Three periods a week; one hour each.*

First term; repeated in second term. Three term hours.

PROFESSOR SANBORN

41-43 **Hydraulic Measurements.** Experiments on contracted and submerged weirs, standard nozzles, proportional water meter, impulse water wheel, duplex pump, and centrifugal pump; river and canal gaugings by rod floats, and current meter. Text book: A treatise on Hydraulics, by Merriman. *Two periods a week; three hours each. Preparation, 41-40.*

Second term. Two term hours. PROFESSOR SANBORN

41-46 **Water Supplies.** The examination of water supplies, quality of water, communicable diseases, purification of water, water supplies, reservoirs, dams, pumping machinery. Textbook; Public Water Supplies by Turneaure and Russell. *Three periods a week; one hour each. Preparation, 41-40.*

First term. Three term hours. PROFESSOR SANBORN

41-47 **Water Power Engineering.** Water shed areas, stream flow, hydraulics of water wheels and turbines, turbine testing, selection of turbine for given conditions, water-power development and value of privileges. Text book: Water Power Engineering, by Mead. *Three periods a week; one hour each. Preparation, 41-40.*

First term. Three term hours. PROFESSOR SANBORN

41-48 **Sewerage.** Purification of sewage, the design of a sewerage system, forms of construction, modern methods of sewage and garbage disposal. *Three periods a week; one hour each. Preparation, 41-46.*

Second term. Three term hours. ——— ———

41-51 **Fire Protection Engineering.** Fire streams, fire pumps, meters, pipe systems, including automatic sprinklers, watchman service, public fire departments, fire causes, and fire proof and slow burning construction. Text book: Fire Protection, by Crosby and Fiske. *Two periods a week; two hours each. Preparation, 41-40.*

Second term. Two term hours. PROFESSOR SANBORN

41-63 **Contracts.** The essential elements of all contracts, their formation and modes of discharge, the fundamental principles of successful writing and interpretation of contracts for the erection of engineering works, are carefully considered. Commercial contracts are also studied, including contracts of association, of sale, of transportation, and instruments of credit. The duties and legal responsibilities of the engineer as agent, business man, or independent contractor are emphasized, and some practice is had in writing engineering contracts and specifications. *Three periods a week; one hour each.*

Second term. Three term hours. ——— ———

41-95 **Civil Engineering Topics.** Presentation and discussion of engineering topics. Text book: Proceedings of the American Society of

Civil Engineers for 1910. *Two periods a week; one hour each. Preparation, Junior Civil Engineering courses.*

First term. Two term hours. PROFESSOR SANBORN

41-99 Civil Engineering Thesis. A single topic is developed by extended research, design, or experimentation.

Second term. Three to five term hours. PROFESSOR SANBORN

45 APPLIED MECHANICS

45-1 Applied Mechanics. This is a consideration of the principles of the strength of materials, relating to beams, columns and shafts, and is essentially a mathematical treatment. In the development, the following subjects are treated in detail: centre of gravity; moment of inertia; the laws of elasticity; coefficients of elasticity; relations between stress and strain; pure stresses, as tension, compression, and shear; elastic limits, working stresses and ultimate resistances of wrought iron, steel, timber, and concrete; reactions and bending moments of beams; bending moment and shear diagrams; theory of flexure. It includes also the design and construction of steel and timber beams, columns, and shafts, and the design of plate girders. *Three periods a week; recitations and lectures with numerous problems. Preparation, 29-5.*

First term. Three term hours. PROFESSOR ROCKWELL and MR. SMITH

45-2 Applied Mechanics. A continuation of the subjects treated in 45-1. In addition, an introduction to the methods of graphic statics, and a brief treatment of the principles of mechanics involved in masonry and concrete construction are given. *Three periods a week; recitations and lectures with problems. Preparation, 45-1.*

Second term. Three term hours. PROFESSOR ROCKWELL and MR. SMITH

45-3 Structural Mechanics. A treatment of the mechanics of masonry structures, including their design and construction. The subjects treated are retaining walls, abutments, masonry arches, chimneys, dams, and masonry foundations. A large part of the course is devoted to design in reinforced concrete structures. *Three periods a week; recitations and lectures with problems and designs. Preparation, 45-2.*

First term. Three term hours. PROFESSOR ROCKWELL

45-12 Applied Mechanics Laboratory. This course deals with the resistance of the materials of construction, and comprises the testing of cast iron, steel, wrought iron, timber, and concrete in tension, compression, and shear, and the determination of the elastic limits, ultimate strengths, and coefficients of elasticity of these materials. *One period a week; two hours. Simultaneous with 45-1.*

First term. One term hour. MR. SMITH

47 STRUCTURAL ENGINEERING

47-1 **Roofs and Bridges.** A study of the different methods, algebraic and graphical, for the determination of stresses in simple framed structures. A large part of the course is devoted to the stresses in bridge trusses in use at the present time, such as the Pratt, Warren, and Baltimore trusses with parallel chords, and modifications of these, with curved chords. Some attention is also given to forms that have been used in the past, as the Whipple and lattice trusses. The fundamental principles of influence lines are developed and applied to the simpler forms of trusses. *Three periods a week; lectures and recitations, with problems. Preparation, 45-1. Simultaneous with 45-2.*

Second term. Three term hours. PROFESSOR ROCKWELL

47-2 **Theory of Structures.** An advanced course in the theory of structures, both steel and masonry. It deals with draw-bridges, cantilevers, suspension bridges, and the elastic arch. The method of influence lines is used to a considerable extent in addition to the usual algebraic methods. *Three periods a week; lectures and recitations, with problems. Preparation, 47-1 and 45-3.*

Second term. Three term hours. PROFESSOR ROCKWELL

47-3 **Structural Design.** An introductory course in the design of framed structures. It consists of the complete designs, together with the necessary drawings of a plate girder bridge, a steel roof truss and some timber structure. *Three periods a week; three hours each. Simultaneous with 45-2 and 47-1.*

Second term. Three term hours.

PROFESSOR ROCKWELL and MR. SMITH

47-7 **Bridge Design.** A course in the design of riveted and pin connected steel bridges, with details of the distinctive features of each, as large compression and tension members, theory of latticing, large riveted connections, pin connections, splices, wind bracing, portal framing, and floor beam connections. *Three periods a week; three hours each. Preparation, 47-1 and 47-3.*

First term. Three term hours. PROFESSOR ROCKWELL and MR. SMITH

47-8 **Structural Design.** The design of steel buildings and reinforced concrete structures. Two or three typical problems in design with estimates of costs are worked out as completely as possible. *Two periods a week; three hours each. Preparation, 47-3 and 45-3.*

Second term. Two term hours. PROFESSOR ROCKWELL and MR. SMITH

47-95 **Structural Topics and Reports.** Reports by each student on assigned reading in engineering literature, and on the stability and safety of structures, based on a personal examination by the student. The presentation is by lecture, but a written copy of each report must be left

with the department. *Two periods a week; one hour each. Preparation credit in required work of the Junior year.*

First term. Two term hours.

PROFESSOR ROCKWELL and MR. SMITH

47-99 **Structural Engineering Thesis.** A single topic is developed by extended research, design, or experimentation.

Second term. Three to five term hours. PROFESSOR ROCKWELL

51 MECHANICAL ENGINEERING

51-1 **Steam Engine.** This course deals with the generation of steam and its use in the steam engine. It comprises a study of modern types of boilers and their auxiliary apparatus; simple and compound engines, both condensing and non-condensing; a discussion of the elementary principles of thermodynamics and of the use of the indicator in steam engine practice. Some attention is given to the production of gas for power purposes and its use in the gas engine. *Three periods a week; one hour each. Preparation, 21-13 and 29-3.*

First term. Three term hours. PROFESSOR C. H. CHASE

51-3 **Thermodynamics.** This course is devoted to the thermodynamics of the steam engine and other heat engines, and includes a study of the properties of steam, gas and air as used in steam engines, turbines, gas engines, air compressors and blowers; also the working fluids and saturated vapors used in refrigeration. The object of the course is to teach the principles, and their application to practical problems. *Three periods a week; one hour each. Preparation, 29-5 and 51-1.*

Second term. Three term hours. PROFESSOR C. H. CHASE

51-7 **Engine Design.** The design of the steam turbine, steam engine and gas engine, involving the strength and proportion of parts and including the layout of the valve gear of high speed engines, the Corliss gear and locomotive valve gears. *Three periods a week; two hours each. Preparation, 51-3, and simultaneous with 51-13.*

First term. Three term hours. PROFESSOR C. H. CHASE

51-8 **Power Plant Design.** A study of steam and gas power plant equipment. Boiler design, including calculations for one type of boiler. Pumps, heaters, condensers; arrangement of piping; chimneys, mechanical draft; mechanical stoking, coal handling. Power gas generators, suction and pressure types. *Three periods a week; two hours each.*

Second term. Three term hours. PROFESSOR C. H. CHASE

51-11 **Mechanical Engineering Problems.** The solution and classroom discussion of simple problems in mechanical engineering requiring calculation, design and the exercise of judgment. A large number of problems from practice are presented in the form commonly met by the

young engineer. Special emphasis is put on the presentation of results. *Two periods a week; one hour each. Preparation, 51-1 and 51-13.*

First term. Two term hours. MR. SVENSEN

51-13 **Mechanics of Machinery.** The determination of the efficiency of machines, the frictional resistance and the forces acting through the several parts. Transmission by belting, ropes, gears, friction drive, and clutches. Analytical and graphic methods are used in the solution of a large number of practical problems. *Three periods a week; one hour each. Preparation, 21-13 and 45-1.*

Second term. Three term hours. PROFESSOR ANTHONY

51-15 **Dynamics of Machinery.** A graphical and analytical consideration of the transmission of energy in machines. The construction of inertia curves and crank effort diagrams applied to the solution of problems relating to fluctuations in speed, flywheels, balancing of moving parts and regulation by governors. *Three periods a week; one hour each. Preparation, 51-13.*

First term. Three term hours. PROFESSOR C. H. CHASE

51-17 **Machine Design.** An application of the principles of mechanism and mechanics to the solution of definite problems in the design of a representative type of machine. A systematic training of the judgment is an important part of this course. *Three periods a week; three hours each. Preparation, 45-2 and 51-13.*

First term. Three term hours. PROFESSOR ANTHONY

51-19 **Production Engineering.** A study of the efficiency of machine tools, the design and construction of special tools for the manufacture of machinery, the investigation of shop conditions and practice for the economical production of machine parts. *Three periods a week; three hours each.*

Second term. Three term hours. ASSISTANT PROFESSOR STEWART

51-21 **Mechanical Engineering Laboratory.** Efficiency of simple machines; screw threads; hoists; simple, duplex, triplex; rope and belt friction; transmission of power by belts. The determination of the clearance of engines; valve setting on plain slide valve, riding cutoff, and Corliss engines. Gage testing; the adjustment and use of indicators; testing indicator springs; the use of several types of steam calorimeters; injector test; flow of steam through orifices. The results of all laboratory work are submitted in the form of carefully written reports. *Two periods a week; three hours each. Preparation, 51-1. Simultaneous with 51-3.*

Second term. Two term hours.

PROFESSOR C. H. CHASE and MR. SVENSEN

51-27 **Mechanical Engineering Laboratory.** Tests on riding cut-off, shaft governor and Corliss engines; a 16x8½x9 duplex pump; measurement of water by weir, nozzle and meter; condenser tests; analysis of flue gases; tests of a 125-H.P. return tubular boiler; co-efficients of friction of oils and friction on different types of bearings; tests on a 35-inch exhaust fan, a 15-K.W. steam turbine and an air compressor; plant test at a 2000-K.W. power station. *Three periods a week; three hours each; three hours outside work. Preparation, 51-21. Simultaneous with 51-7.*

First term. Four term hours.

PROFESSOR C. H. CHASE and MR. SVENSEN

51-29 **Mechanical Engineering Laboratory.** (**Internal Combustion Engines.**) A study of internal combustion engines based on theory and practical operation. The various types of gas, gasolene, and oil engines, with particular attention to governing, valve timing, carburetion, and ignition. Tests of automobile, marine, stationary and producer types. Text-book: Carpenter and Diederichs, "Internal Combustion Engines." *Two periods a week; three hours each. Preparation, 51-3 and 51-21.*

Second term. Two term hours. ASSISTANT PROFESSOR STEWART

51-95 **Mechanical Engineering Topics.** A course of lectures by students. Each member of the course chooses three topics from the proceedings of the American Society of Mechanical Engineers. The subjects are presented to the class in the form of lectures, followed by discussion and criticism. *Two periods a week. Preparation, Junior Mechanical Engineering courses.*

First term. Two term hours. PROFESSOR ANTHONY

51-99. **Mechanical Engineering Thesis.** An essay based on extended personal research, design, or experimentation.

Second term. Three to five term hours.

PROFESSORS ANTHONY, C. H. CHASE AND ASSISTANT PROFESSOR STEWART

54 GEOLOGY

The subjects offered in the department of Geology do not form a sequence, but are intended to give different classes of students that knowledge of geology and mineralogy which they need. In all cases, they aim to include some real grasp upon the structure and history of the earth, the problems presented in the study thereof, and the modes of attack upon those problems. The first subject (Geology 1) in introductory, open to all, and intended primarily for those who have had no previous work in science. The other subjects are such that certain

preliminary studies, stated in connection with each, must be taken before entering upon them.

The illustrative collections in these lines are ample. Besides exhibition specimens in the Barnum Museum, there is a working collection illustrating mineralogy, lithology, and dynamical and historical geology. These are supplemented with maps, diagrams, photographs, and lantern slides. The work in each subject consists of lectures and recitations, together with work in the laboratory and in the field. Excursions are taken to neighboring points that illustrate certain phenomena. Tufts College is well placed for field work and for the study of various natural processes.

[54-1 **Physical Geology and Geography.** Lectures and recitations; laboratory and field work.
Second term. Three term hours. PROFESSOR LANE]

[54-3 **Mathematical Problems presented to Geologists.** Conferences and critical reading of selected papers and original work.
First and second terms. Six term hours. PROFESSOR LANE]

[54-4 **Field Geology.** *One recitation and six hours field work a week. Preparation, 54-2.*
First part of first and last part of second term. Three term hours. PROFESSOR LANE]

54-21 Physical Geography and Meteorology.
First term. One term hour. PROFESSOR LANE

54-22 Physical Geology.
First term. Two term hours. PROFESSOR LANE

54-23 Economic Geology.
Second term. One term hour. PROFESSOR LANE

54-24 Historical Geology.
Second term. Two term hours. PROFESSOR LANE

61 ELECTRICAL ENGINEERING

The aim of the work in this department is to fit men to deal intelligently with electrical problems likely to be presented to the practical engineer. With this in view, principles rather than details are emphasized, and these principles are developed and fixed by the free use of concrete problems as well as by laboratory experiments and tests.

61-3 **Dynamo Electric Machinery.** An elementary course dealing with the fundamental principles of dynamo electric machinery and their application in the construction and operation of generators and motors. Some attention is also given to storage batteries, arc and incandescent lamps and systems of direct-current distribution. *Three periods a week; one hour each. Preparation, 31-3.*

First term. Three term hours. PROFESSOR HOOPER

61-4 **Electrical Laboratory.** An introduction to electrical testing, including the ordinary electrical measurements, calibration of instruments, study of arc and incandescent lamps, the storage battery, and the magnetic properties of iron. During the latter part of the course some of the more elementary dynamo tests are undertaken. *Three periods a week; three hours each; three hours outside work. Preparation, 61-3.*

Second term. Four term hours.

ASSISTANT PROFESSOR ROLLINS and MR. MUNRO

61-5 **Alternating Current Machinery.** A course treating of the theory, construction, and operation of synchronous machinery. *Three periods a week; one hour each. Preparation, 61-3.*

Second term. Three term hours. PROFESSOR HOOPER

61-7 **Dynamo Laboratory.** Advanced, direct, and alternating dynamo testing. *Three periods a week; three hours each; three hours outside work. Preparation, 61-1 and 61-3. Simultaneous with 61-15 and 61-16.*

First term. Four term hours.

ASSISTANT PROFESSOR ROLLINS AND MR. MUNRO

61-10 **Electrical Laboratory.** For students in engineering courses other than Electrical. Measurements, tests, and descriptive matter selected with special reference to the needs of those who have but little opportunity for electing subjects in Electrical Engineering. *Three periods per week; two hours each. Preparation 61-3.*

Second term. Two term hours. ASSISTANT PROFESSOR ROLLINS

61-11 **Alternating Currents.** The mathematical development of equations and formulas from elementary electrical principles, and the physical interpretation of the equations and formulas thus developed. *Three periods a week; one hour each. Preparation, 31-3 and 29-5.*

First term. Three term hours. PROFESSOR HOOPER

61-15 **Electrical Engineering.** A course dealing with the production, transmission, distribution, and utilization of electrical power. *Three recitations a week, with solution of assigned problems. Preparation, 61-5.*

First term. Three term hours. PROFESSOR HOOPER

61-16 **Electrical Engineering.** A continuation of 61-15. *Three periods*

a week; one hour each. Preparation, 61-15.
Second term. Three term hours. PROFESSOR HOOPER

61-17 Telephone and Telegraph. A course on principles and operation of telephone and telegraph systems. *Three periods a week. Preparation, 31-3 and 61-4.*
First term. Three term hours. ASSISTANT PROFESSOR ROLLINS

61-21 Dynamo Design, D.C. A course on the design of direct-current machinery. *Three periods a week; two hours each. Preparation, 61-5.*
First term. Three term hours. MR. MUNRO

61-22 Dynamo Design, A.C. A course on the design of alternating current apparatus. *Three periods a week; two hours each. Preparation, 61-5 and 61-21.*
Second term. Three term hours. MR. MUNRO

61-95 Electrical Topics. Lectures by students on electrical subjects, followed by discussion and criticism. *Three periods a week. Preparation, 61-15.*
Second term. Three term hours. PROFESSOR HOOPER

61-99 Thesis. An essay based on some construction, design, or investigation.
Second term. Three to five term hours.
PROFESSOR HOOPER, ASSISTANT PROFESSOR ROLLINS and MR. MUNRO

64 MINERALOGY

64-1 Mineralogy and Lithology. *Two recitations and four hours laboratory work a week. Preparation, 35-1.*
First term. Three term hours. PROFESSOR LANE

64-1 Mineralogy alone may be of use to civil and structural engineers, but those who are looking to mining or chemical engineering should also take 64-2.

64-2 Crystallography and Optical Mineralogy. *Two lectures and four hours laboratory work a week. Preparation, 64-1.*
Second term. Three term hours. PROFESSOR LANE

66 and 81 POLITICAL ECONOMY

81-2 Elements of Economics. Designed especially for students of engineering; aims at a comprehensive study of the elements of economics, with special reference to present day economic and social problems. Text book, lectures, tests. *Three recitations a week.*
First and second terms. Six term hours. PROFESSOR METCALF

[**81-4 Administrative Engineering.** The elements of appraisals and valuations in public service and industrial corporations, the general distri-

bution of overhead charges, the relation of principal, interest, depreciation and capitalization to profits and the "fair return," aims and methods of cost keeping, whether for shop or construction work, and the bearing of accounts upon all these matters. Efficient organization and advanced systems of management are studied. The function of the banker's engineer, and engineering promoter are sketched. *Three hours a week; lectures, assigned reading, reports, and quizzes.*

First term. Three term hours. ——— ———]

66-5 **Money, Credit, and Banking.** An historical course, with special reference to the financial experience of the United States. Leading topics are Hamilton's financial system; protection and revenue tariffs; the bank question; the fiscal policy of the Civil War; resumption of specie payments; the national banking system; State and local taxation; silver legislation and the panic of 1893; government loans; present currency problems. Dewey's financial History of the United States is used as a guide. *Three recitations a week. Preparation, 81-1.*

Second term. Three term hours. PROFESSOR METCALF

66-16 **Modern Labor Problems.** This subject deals mainly with the social and economic problems arising from the relations of employers and their laborers. The chief topics will be the growth, methods, and aims of modern associations of wage earners; methods of conciliation and arbitration; strike and factory legislation; employers' liability and recent compensation acts; compulsory publicity; provident institutions and friendly societies. Each member of the class will be expected to make a report upon a labor union. *Lectures and recitations. Three recitations a week. Preparation, 81-1.*

Second term. Three term hours. PROFESSOR METCALF

66-17 **Modern Industrial Organization and Management.** Brief survey of the evolution of modern capitalism; plant equipment; the concentration and integration of modern business; defects of the present industrial order; types of business administration and management; the principles of scientific management and their universal application; what employer, employee, consumer, and trade unions gain through the economies of scientific management. *Lectures, discussions, and theses.*

First term. Three term hours. PROFESSOR METCALF

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Assistant Professor of Medical Chemistry

ARTHUR I. ANDREWS, PH.D.
Associate Professor of History

*Absent on leave.

PHILIP H. COBB, PH.D.
Assistant Professor of Physical and Organic Chemistry

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EXECUTIVE: Professor Hooper, *Chairman*; Professors Denison and Wren.

REQUIREMENTS FOR DEGREES: Dean Kingsley, *Chairman*; Professors Metcalf and Wade.

The Graduate School

INSTRUCTION

Graduate instruction is given by members of the several existing faculties. The advanced elective work offered to undergraduates in any department of the School of Liberal Arts is open to graduate students, and will count for the degree of Master of Arts, on condition that it be not counted for any other degree.* Additional courses still more advanced may be arranged with the instructor in whose department the work is to be done.

DEGREES

The degrees offered are Master of Arts and Master of Science. Departments at present open to candidates for the degree of Master of Arts are:—

English	Mathematics,
Modern Languages,	Chemistry,
Ancient Languages,	Physiological Chemistry,
History and Public Law,	Biology,
Political Science,	Physiology,
	Electricity.

The degree of Master of Science is offered in Biology, in Chemistry, and in Engineering.

The Degree of Master of Arts will be conferred upon graduates of Tufts College who have received the degree of Bachelor of Arts, or upon graduates of other colleges whose course of study has been equivalent to that required at Tufts College for the degree of Bachelor of Arts, upon the following conditions: —

1. They shall have completed an approved course of advanced study, including the equivalent of at least thirty term hours, in one or at the most two departments. If two departments are chosen they should be allied, and should occupy the relation of major and subsidiary department.

* Students doing work in undergraduate classes are required to take the appointed final examination with these classes.

2. This course shall be pursued during a residence of not less than one year. In the case of graduates of Tufts College, the condition of residence may be waived by special permission, but the degree cannot then be taken with less than two years of graduate study.

3. The candidate shall prepare a thesis in the form prescribed by the regulations, which may be ascertained at the Secretary's office, and shall pass a satisfactory examination under the supervision of a board of three examiners, appointed by the Graduate Faculty at its May meeting. The thesis must be presented at least one month before Commencement.

4. No subject counted for the first degree will be counted for the second degree.

5. Students taking the degree at the end of a four years' course of study must have complied with the requirement as to standing governing those who receive the degree of A.B. at the end of three years; that is, an average standing of Grade B, or higher, must have been attained on the entire work of the course.

6. Candidates for this degree must make a written application to the Graduate Faculty before October 1 of the college year in which the degree is to be conferred, and if the degree is not taken after one year of study they must also give a second notice three months before receiving the degree. This application shall indicate the department or departments in which it is proposed to pursue work for a degree.

Graduates of Tufts College who have taken the degree of Bachelor of Philosophy, or graduates of other colleges holding a degree of similiar grade, must complete the requirement for the degree of Bachelor of Arts before they can be entered as students in courses leading to the degree of Master of Arts.

THE DEGREE OF MASTER OF SCIENCE will be conferred upon Bachelors of Science who shall satisfactorily pursue advanced professional study at Tufts College for one year, under the conditions required of candidates for the degree of Master of Arts; or upon Bachelors of Science of Tufts College who shall pursue graduate work *in absentia* for at least two years, or who shall present suitable evidence of three years of professional work, one year of which must be in a position of responsibility, in which case a certain amount of professional study will be assumed. A thesis based upon this study will be required.

DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF MASTER OF ARTS

[For detailed statements of the subjects referred to in the following pages, see "Departments of Instruction" in the announcement of the School of Liberal Arts.]

ENGLISH.—It is assumed that candidates for the degree of Master of Arts in English will have already laid a good foundation in English composition and the history of English literature. The amount of work expected is roughly indicated by that required of a major student in English at this College. When not anticipated in undergraduate work, the subjects numbered 7, 10, 14 to 21, 23 to 26, 28, 34, and 36 may be counted towards the Master's degree, provided that the work done distinctly surpasses in quality and quantity that required of undergraduates. On the other hand, a part of the work or the entire work for the advanced degree may consist of a special course of study, undertaken under the direction of the department. Such special work must be of creative or investigative order. It may take the form of discussion of some question in literary history or literary criticism. It may consist of the intensive study of an author or a period. The use of German and French is sometimes necessary. A final oral examination is customary.

MODERN LANGUAGES.—The undergraduate subjects at present offered in Modern Languages enable the candidate for the degree of Bachelor of Arts who specializes in this department to cover the work formerly required for the Master's degree. For those who have not taken the more advanced subjects, the department offers a full graduate course leading to the degree of Master of Arts. The work is performed in existing undergraduate classes. To enter upon this course, the candidate must have completed the equivalent of six of the Modern Language subjects, including 1 and 3 in both German and French. Of elementary subjects only Italian may be taken, by such as have had the equivalent of two years of French. Graduate students whose special work is being performed in other departments are admitted to such classes in German and French, beyond subject 1, as their proficiency will warrant.

ANCIENT LANGUAGES. — Candidates for the degree of Master of Arts in Greek or Latin must have completed, for Greek, subjects 1, 2, 3, and 4 or 5; for Latin, subjects 1, 2, 3 or 4, and 5, or equivalents. It is desirable that candidates for this degree in either of the ancient languages present the other as a minor department. Exceptional cases will be treated in accordance with the varying circumstances. Greek 4, 5, 7, 8, and 9, Latin 3, 4, 6,and Classical Archæology 1, 2, 3, 4, 5, 6, 7, and 8, so far as these have not been anticipated as undergraduate work, may be counted towards the Master's degree. Graduate students will be expected to do work of an advanced character, either in classes with undergraduates or on special lines of investigation assigned by the instructors. The required thesis, on an approved topic, must embody the results of the investigation of some author or period, or of some philological or archæological subject. A reading knowledge of French and German is indispensable.

HISTORY AND PUBLIC LAW.—Before beginning graduate work in History and Public Law every student must have completed History 1 and 2, and Public Law 1 or 2, or their equivalent. The advanced subjects enumerated in the catalogue, in so far as they are suited to the needs of the candidate, may be offered for the higher degrees, but it is expected that much of the candidate's work will consist of special work pursued under the direction of the department.

For the degree of Master of Arts, a working knowledge of French is essential. A similar knowledge of German is desirable, and in some cases may be necessary. In addition to the subjects required for the degree candidates will be expected to do something in the way of an independent investigation of a definite subject, the result to be embodied in a thesis.

A final oral examination is customary.

POLITICAL SCIENCE.—The degree of Master of Arts in Political Science is conferred on graduates of Tufts College who pursue successfully one year of resident graduate study. Bachelors of Arts of other colleges must satisfy the department

that they are qualified by previous training to enter upon the desired course of study, and show the results of a year's resident graduate work with high credit. A good reading knowledge of French and German is desirable, and may in certain lines of work be necessary. Before receiving the degree all candidates are expected to sustain a final oral examination, and give evidence by a thesis of their ability to do work of the investigative order. In addition to the regular advanced work offered by the department, special subjects giving opportunity for original investigation will be outlined for candidates wishing to pursue them.

MATHEMATICS.— Graduate students in Mathematics must have acquired a working knowledge of the calculus, and may offer as part of their work for the Master's degree any of the subjects given by the department except the first six, but subjects 7, 9, and 10, or their equivalents, must be included. Candidates will hold themselves in readiness to be examined at the end of their studies upon any topics treated in the first six subjects, as well as upon work offered for the degree.

CHEMISTRY.—The requirements for beginning graduate work in Chemistry are the completion of subjects 1, 2, and 3, or their equivalent. Subjects 4, 5, 7, 8, 9, 10, 12, and 14 may be counted toward the Master's degree, if they have not been counted as undergraduate work. Examination is required, and a satisfactory thesis.

PHYSIOLOGICAL CHEMISTRY. — The work in Physiological Chemistry requires in preparation a thorough foundation in inorganic and organic chemistry, including qualitative and quantitative analysis; the ability to read scientific French and German readily; and a thorough knowledge of the elements of physics, particularly with reference to the laws of the density of gases and fluids under heat and pressure, as well as such acquaintance with optics as will enable one to use intelligently the polariscope, the spectroscope, and the microscope.

The course is one of laboratory work wholly, under the per-

sonal advice and assistance of the instructor, and must include one original investigation, to require not less than one half-year, and to be accompanied by a satisfactory thesis upon the results of such research. The subject of this investigation may be taken from the realm of enzymes, metabolism, or hygiene. A rigid examination will also be demanded upon the principles of physiological chemistry.

PHYSIOLOGY.—Before beginning graduate work in Physiology the candidate for the degree of Master of Arts must have had at least a year's training in biology, and, besides, a knowledge of the outlines of anatomy and physiology such as may be obtained from such works as Martin's Human Body, with simple laboratory experiments. A reading knowledge of French and German is desirable, and in some cases may be necessary. The work of the year is largely practical. It involves the completion of the work in physiology required of candidates for the degree of Doctor of Medicine, and, in addition, the investigation of some simple problem which shall serve as the basis of the required thesis.

BIOLOGY.—Before beginning graduate work in Biology the student must have a good knowledge of the elements of vertebrate and invertebrate anatomy and of physiology (subjects 1 to 4 of Tufts College, or their equivalent), and must be able to use French and German. The work offered for advanced degrees is in the lines of comparative anatomy and of the histology and embryology of animals. Consequently the greatest stress will be laid upon laboratory work, but students may also take the subjects numbered 5, 6, 8, and 9.

For the degree of Master of Arts or Master of Science the student must pass a satisfactory examination in the principles of morphology, and present an acceptable thesis embodying the result of research.

ELECTRICITY.—As a preparation for graduate work in Electricity the candidate must have a good mathematical foundation, including some knowledge of differential equations, must have

credit in Physics 31-1, 31-2, 31-3, and 31-7, or their equivalents, and should have completed Electricity 61-3, 61-4, and 61-5. The last three subjects may count towards the Master's degree if not already counted towards the first degree.

Of the thirty term hours required, nine may be used in the preparation of a thesis.

FELLOWSHIPS

THE OLMSTEAD AND MINER FELLOWSHIPS IN NATURAL HISTORY.—In accordance with the spirit of the gift of the late Charles Hyde Olmstead, of Hartford, Conn., the Trustees have established two fellowships in Natural History, to be known respectively as the Olmstead and the Miner Fellowship. The income of these fellowships, amounting to two hundred and fifty dollars annually each, is awarded by the Trustees to graduate students in Natural History, upon recommendation of the Administrative Board. The conditions of the fellowships are as follows:—

(1) The application must be made in writing before May 1, addressed to the President of the College. It must contain evidence of a liberal education, and of ability to profit by the work to be done, as well as testimonials of good character from instructors or others. Any original article, either written or printed, is an aid in ascertaining the attainments of the candidate.

(2) The holder of the fellowship will be expected to devote himself to the prosecution of some special subject, under the direction of the professor in charge of the department of Natural History. He may be called upon for minor services, such as conducting examinations, but he shall not be called upon to teach. He may, however, at his own option, and with the approval of the President, give instruction by lectures or otherwise to persons connected with the College, but not elsewhere.

(3) The payments will be made half in January and half in June; but, in case of resignation or removal from the fellowship, payment will be made only for the time it is actually held. The holder of the fellowship is not exempt from the payment of tuition.

(4) Residence is a condition of holding either of these fellowships.

The holder of a fellowship may be eligible to a single re-election, but incumbency constitutes no claim to re-appointment.

SCHOLARSHIPS

The Trustees of Tufts College have established eleven scholarships, one in each department offering graduate work. Each scholarship gives free tuition to the incumbent, who is expected to devote himself exclusively to advanced study.

These scholarships are awarded by the Graduate Faculty, on recommendation of the heads of departments concerned, at or before the beginning of the year in which they are to be conferred. Applications must be made to the President on or before May 1 of the preceding year, and will regularly be acted upon at the June meeting of the Graduate Faculty.

TUITION

The tuition fee for the whole course for the degree of Master of Arts, or Master of Science, is *one hundred dollars*, of which *fifty dollars* is payable in advance.

THE CRANE THEOLOGICAL SCHOOL

Faculty of the Crane Theological School*

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT

CHARLES H. LEONARD, A.M., D.D., LL.D., DEAN, EMERITUS
Goddard Professor of Homiletics and Pastoral Theology

PHILIP M. HAYDEN, A.B., SECRETARY†

— —
Packard Professor of Christian Theology

GEORGE M. HARMON, A.M., D.D.
Professor of Biblical Theology

HENRY I. CUSHMAN, A.M., PH.D.
Instructor in Homiletics and Pastoral Care

HINCKLEY G. MITCHELL, A.M., S.T.B., PH.D., D.D.
Professor of Hebrew and Old Testament Exegesis

ADOLF A. BERLE, D.D.
Woodbridge Professor of Applied Christianity

LUCIUS M. BRISTOL, A.M., S.T.B.
Instructor in Applied Christianity

EDWIN C. BOLLES, A.M., PHD., D.D., LL.D.
Dickson Professor of English and American History

WILLIAM G. TOUSEY, A.M., D.D.
Professor of Logic and Ethics

J. STERLING KINGSLEY, Sc.D.
Professor of Biology

RICHARD JONES, PH.D.
Professor of English Literature

ALFRED C. LANE, A.M., PH.D.
Pearson Professor of Geology and Mineralogy

HERBERT E. CUSHMAN, A.M., PH.D.
Professor of Philosophy

*Below the line are printed the names of professors who, while not members of the Theological Faculty, offer subjects that are open to students of the School.

†*Ex officio*, as Secretary of the Department of Arts and Sciences.

THOMAS WHITTEMORE, A.B.*
Professor of English

HENRY C. METCALF, A.B., PH.D.
Jackson Professor of Political Science

LAWRENCE B. EVANS, PH.D.*
Professor of History

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

ARTHUR I. ANDREWS, PH.D.
Associate Professor of History

OSCAR MARTIN, M.D.
Director of the Gymnasium

COMMITTEE ON PROMOTIONS

President Hamilton, *Chairman;* Professors Harmon and Hayden.

*Absent on leave.

The Crane Theological School

The Theological School is one of the co-ordinate departments of Tufts College. Students of the School are members of the College, enjoying its privileges and subject to its regulations.

COURSES OF STUDY

A course of three years, open to college graduates, leads to the degree of Bachelor of Divinity.

A course of six years leads to the degrees of A.B. and B.D., the requirements for admission being the same as those for candidates for the degree of A.B.

A course of four years leads to the degree of B.D., the requirements for admission being the same as those for candidates for the degree of A.B.

Special courses are arranged for such persons as may be deemed by the Faculty qualified for work in the School.

SYNOPSIS OF THE REQUIREMENTS FOR A.B. AND B.D.

[The unit here used (called the "term hour") is equivalent to one program hour a week for a half-year.]

	Term Hours
Language (Greek, Latin, German, French; each student to take *three*)	18
Science (Mathematics, Physics, and Biology or Chemistry)	18
History (Civil and Religious)	18
Bible	27
Philosophy (Psychology, Logic, Ethics, Systematic Theology, etc.)	30
Sociology (Economics and Applied Christianity)	12
English (Rhetoric, Literature, Oratory, and Homiletics)	36
Pastoral Care	6
Physical Training	2
Electives	15
Total term hours	182

SYNOPSIS OF THE FOUR-YEAR COURSE FOR B.D.

[The unit here used (called the "term hour") is equivalent to one program hour a week for a half-year.]

	TERM HOURS
BIBLE	33
PHILOSOPHY (Logic, Ethics, Theology)	21
ENGLISH (Rhetoric, Literature, Oratory, Homiletics)	30
HISTORY (Civil and Religious)	18
APPLIED CHRISTIANITY	6
PASTORAL CARE	6
PHYSICAL TRAINING	2
ELECTIVES	6
Total	122

For all theological students the major instructor and official adviser on general matters relating to college affairs is the Dean of the Theological School, or some appointed representative from the Theological Faculty.

Departments of Instruction

58 OLD TESTAMENT

PROFESSOR MITCHELL

The constant aim in this department will be to give the student such a knowledge of the Hebrew Scriptures as will enable him personally to appreciate their varied excellence and utilize them as a source of inspiration and instruction in his ministry. The first step in this direction is the acquisition of a working knowledge of the Hebrew language; the second a thorough course in exegesis. Those who take these courses will be able to study with profit such general subjects as Introduction to the Old Testament, History of the Hebrews, and Ethics, or Theology of the Old Testament, as they are offered.

SUBJECTS

3. The Hebrew Language. First Semester: the elements of Hebrew etymology, with exercises in reading and writing Hebrew. Second Semester; readings from the books of Judges and Samuel, with notes and references on Hebrew syntax. *TTS 4.* PROFESSOR MITCHELL

[6. The Narrative Literature. A comparative study of the historical books to determine their relative value from the literary, historical, and religious standpoint. *Two hours, to be arranged.* (F) PROFESSOR MITCHELL]

[7. The Prophetic Literature. An examination of selections from the works of the principal prophets, to ascertain the literary and doctrinal peculiarities of each, and his place in the development of Hebrew prophecy. *Two hours, to be arranged.* (S) PROFESSOR MITCHELL]

8. The Didactic Literature. The books of Job, Proverbs, and Ecclesiastes, and their significance for the history of Hebrew thought. *TT 5.* (F) PROFESSOR MITCHELL

9. The Lyric Literature. Early songs; select psalms of devotional or theological importance; the Song of Solomon and its structure and meaning. *TT 5.* (S) PROFESSOR MITCHELL

[10. The Ethics of the Old Testament. A survey of the development of moral ideas among the Hebrews, with lectures and papers. *One hour, to be arranged.* PROFESSOR MITCHELL]

11. Introduction to the Old Testament. An inquiry into the age, structure, authorship, and history of the several books, with lectures and papers. *S 5.* PROFESSOR MITCHELL

68 NEW TESTAMENT

PROFESSOR HARMON

This department has three divisions: History, Criticism, and Exegesis; and for students who have not had Greek, a course in New Testament Greek is provided. The historical course covers the two centuries preceding the ministry of Jesus, with the aim to give the student a knowledge of the conditions under which Christianity entered the life of the world, the ministry of Jesus, and the rise and development of the Apostolic Church. The method pursued in this study is to refer the student to authorities dealing with the topics assigned and notes given by the instructor. In Criticism the student deals with the sources

of the text and the methods for determining its correctness, also with the facts of the different New Testament writings. In this the method pursued is the same as in the study of the history. In Exegesis the work is of reading selected passages from the Greek of the Synoptic Gospels, the Fourth Gospel and the Pauline Epistles. The instructor gives the student from time to time notes as to the principles of exegesis, requiring him to exemplify them in his work. He is also taught the discriminating use of commentaries with the aim to form the habit of independent and correct interpretation.

SUBJECTS

11. History of the Beginnings of Christianity. *TTS 3.*
PROFESSOR HARMON

2. New Testament Criticism. *Three hours, to be arranged.* (S)
PROFESSOR HARMON

3. New Testament Exegesis and Theology. *TTS 2.*
PROFESSOR HARMON

[4. New Testament Greek. *Three hours, to be arranged.*
PROFESSOR HARMON]

56 HISTORY OF RELIGIONS

PROFESSOR BERLE

The department of History of Religions deals with a special phase of the general subject of history, showing the growth of religion, and its relation to civilization — including politics, social life, philosophy, literature, art, and personal character. See also the subjects listed in the departments of Old Testament and New Testament.

SUBJECTS

4. History of Religions. This course seeks to give an outline of the origin and development of religion from the tribal cults of primitive races to the great ethnic religions, excluding Christianity. It will deal with the evolution from the primitive stages of social life and culture to the higher forms of religious organization, as shown among the Hebrews, the Chinese, the Japanese and the Egyptians. It will present the religions of the Semites in their various groups. It will outline the religion of the Greeks, Romans and Persians, and the systems of India, both ancient and modern. The purpose will be to present a comparative view of the social-religious development of the world prior to the advent of Christianity. Lectures, thesis and outlines of reading. *MWF 4.* (F) PROFESSOR BERLE

5. History of the Christian Religion. The course will present a review of the rise and expansion of the Christian religion and its relation to the historical, social, intellectual and cultural movements of the world to the present time. Its differentiation into churches and sects. Its influences on life and civilization and its own modifications with the changes in civilization. It will trace the permanent and the transient forces in Christian history. Lectures, theses and outlines of reading. *TTS 4.*

PROFESSOR BERLE

6. Special Investigations in the History of Religion. A course in research into particular questions of the origin and development of religion. This course is open only to students who have taken History of Religions 4 and 5 and who have a reading knowledge of French. *Three hours, to be arranged.* (S) PROFESSOR BERLE

16 ETHICS AND PHILOSOPHY OF THEISM

The several courses in Ethics and the Philosophy of Theism offered by Professor Tousey of the School of Liberal Arts are open to theological students, and are included in the curriculum of the Theological School. For detailed statement of subjects, see Philosophy 6, 7, 8, and 15 in the statement of that department in the School of Liberal Arts.

86 THEOLOGY

The purpose is, primarily, to assist the student to think independently on theological subjects, and to abide in the consequences. In pursuing this purpose, attempt is made to co-ordinate the products of biblical theology, religious history, natural theology, ethics, and, indeed, of all the proper sources of material, and thus to produce a scientific theology. It is believed that such a system will deserve and receive the student's confidence, and will enlist his energies.

The method includes several stages: —

1. The history of important doctrines and creeds, as a general introduction.

2. *a.* Special history of the topic in hand, with analysis and classification of opinions and theories according to their logical relations.

b. The collection of the facts, so far as given in the present

state of knowledge, and the criticism of the theories on the basis of the facts.

c. The organization of the results into a scientific product.

d. Illustrative applications to practical problems,—ecclesiastical, political, social, and personal.

SUBJECTS

1. Historical Introduction. *Three hours, to be arranged.* (S) PROFESSOR BERLE

[2. Theology; anthropology; soteriology; eschatology; critical study of modern doctrines. *MWF 5.* ——— ———]

76 APPLIED CHRISTIANITY

PROFESSOR BERLE AND MR. BRISTOL

Christianity will be considered with special reference to the practical problems of life, individual and social, under the three general aspects of religious education, religious expansion and social regeneration. The subjects considered will deal with the religious view of every aspect of modern society.

SUBJECTS

5. Religious Pedagogy. Various problems of moral and religious education; Sunday School organization and methods. *Th 7.* MR. BRISTOL

6. Home Missions. Immigration; the race problem in America; the church and the rural community. *TT 6.* (F) MR. BRISTOL

7. Foreign Missions. Sociological aspects of Missionary endeavor in selected countries. For the current year, China and Japan. *TT 6.* (S) MR. BRISTOL

[8. The History of Social Ideas in the Light of Christian Teaching. The Rise and Organization of Society and the Development of Social Orders. The Evolution of the Social Ideal. The Morphology of Social Ideas under Christian Influence. The Social Sources of Christian Institutions. (F) PROFESSOR BERLE]

[9. The Christian Church as a Social Instrument. The functions of the primitive church and the expansion of church activities, educational, political and therapeutic. Modern re-distribution of these functions and re-adjustment to the industrial and economic needs of democratic society. (S) PROFESSOR BERLE]

10. Ethical Aspects of Modern Industrial Organization. The comparative examination of the stages of industrial development. Contrasts between mediæval and modern conceptions of industry. The social interpretation of industry. The rise of sociological jurisprudence and its significance in the future of industry. (F) PROFESSOR BERLE

11. The Economic Principles of a Christianized Society. Political and Economic principles examined in the light of the teaching of Jesus Christ. The fundamental laws of Christian society stated and compared with prevailing systems of political economy. Possibilities and limitations of a Christian state. *Three hours, to be arranged.* (S) PROFESSOR BERLE

82 HOMILETICS

DR. H. I. CUSHMAN

The work consists of studies in constructive homiletics; the varying conception of preaching as determined by the person and the time; helps in the preparation of sermons from the study of history, literature, and character; the preparation and delivery of sermons; practice in extempore discourse; the cultivation of power in preaching; the study of representative preachers.

SUBJECTS

1. Introductory Course in Homiletics. (*a*) Lectures and Recitations on the basis of text book, Hoyt's "The work of Preaching." *One hour.* (F) (*b*) Sermon Making. Short extempore and written sermons on texts or topics chosen by students or assigned by the instructor. *One hour.* (*c*) Cultural study of the words and life of Christ as fundamental preparation for preaching. *One hour.* (*d*) Conferences. *MWF 6.*

DR. H. I. CUSHMAN

2. Advanced course in Homiletics. (*a*) Lectures and Recitations on the basis of text book, Hoyt's "The Preacher." *One hour.* (F) (*b*) The art of preaching. Practice in the making of sermons, and in their delivery in class. *One hour.* (*c*) Pastoral Care. Studies in the conduct of Public Worship, and of special services on the basis of Dean Leonard's Book of Prayer. Baptism, Confirmation, the Holy Communion, Marriages and Funerals will be considered; also, Parish Calls and other pastoral functions with Gladden's "The Christian Pastor" as a book of reference. *One hour.* (S) (*d*) Conferences. *MWF 5.* DR. H. I. CUSHMAN

SIX-YEAR COURSE

A detailed synopsis follows of the Course of Six Years, arranged for one who enters with Greek * and Latin, and leading to degrees A.B. and B.D.

FIRST YEAR

First Term		Second Term	
English 1	3	English 2	3
Mathematics 3	3	Mathematics 1 or 2	3
Physics 1	3	Physics 1	3
Greek 2	3	Greek 2	3
French or German	3	French or German	3
Physical Training		Physical Training	

SECOND YEAR

First Term		Second Term	
Philosophy 1	3	Oratory 1	3
History 1	3	History 1	3
Biology 1 or Chemistry 1	3	Biology 1 or Chemistry 1	3
German or French	3	German or French	3
English (elective)	3	English (elective)	3
Physical Training		Physical Training	

THIRD YEAR

First Term		Second Term	
Political Science 1	3	Political Science 1	3
History of Religions 5	3	History of Religions 5	3
New Testament 11	3	New Testament 11	3
Philosophy 3	3	New Testament 2	3
Oratory 2	3	One elective	3

FOURTH YEAR

First Term		Second Term	
New Testament 3	3	New Testament 3	3
Old Testament 3	3	Old Testament 3	3
Philosophy 6	3	Philosophy 7	3
Applied Christianity	3	Applied Christianity	3
English (elective)	3	English (elective)	3

FIFTH YEAR

First Term		Second Term	
Homiletics 1	3	Homiletics 1	3
Philosophy 15	3	Philosophy 15	3
Theology 2	3	Theology 2	3
Old Testament 6 or 8	2	Old Testament 7 or 9	2
Old Testament 10 or 11	1	Old Testament 10 or 11	1
One elective	3	One elective	3

SIXTH YEAR

First Term		Second Term	
Homiletics 2	3	Homiletics 2	3
History of Religions 4	3	History of Religions 6	3
Philosophy 55	3	Philosophy 55	3
Electives	6	Electives	6

* Those who enter with no Greek must take New Testament Greek in place of one of the free electives, and may substitute Latin 1 for Greek 2.

FOUR-YEAR COURSE

A detailed synopsis follows of the Course of Four Years, arranged for one who enters without Greek,* and leading to the degree of B.D.

FIRST YEAR

First Term		Second Term	
English 1	3	English 2	3
History 1	3	History 1	3
New Testament 11	3	New Testament 11	3
Philosophy 3	3	New Testament 2	3
One elective	3	Oratory 1	3
Physical Training		Physical Training	

SECOND YEAR

First Term		Second Term	
Philosophy 6	3	Philosophy 7	3
New Testament 4	3	New Testament 4	3
History of Religions 5	3	History of Religions 5	3
English (elective)	3	English (elective)	3
Oratory 2	3	One elective	3
Physical Training		Physical Training	

THIRD YEAR

First Term		Second Term	
Homiletics 1	3	Homiletics 1	
Old Testament 3	3	Old Testament 3	3
New Testament 3	3	New Testament 3	3
History of Religions 4	3	History of Religions 6	3
Philosophy 15	3	Philosophy 15	3

FOURTH YEAR

First Term		Second Term	
Homiletics 2	3	Homiletics 2	3
Theology 2	3	Theology 2	3
Old Testament 6 or 8	2	Old Testament 7 or 9	2
Old Testament 10 or 11	1	Old Testament 10 or 11	1
Applied Christianity	3	Applied Christianity	3
Elective	3	Elective	3

* One who enters with Greek and Latin has a larger range of electives.

Supplementary Information

[See also the section devoted to General Information.]

RELIGIOUS OBSERVANCES

The students in the Crane Theological School attend daily morning prayer in Goddard Chapel; and religious services, in the care of the students, are held in Packard Hall from time to time.

SUPPLEMENTARY LECTURES

Lectures which bear upon the general work of the Christian ministry, and upon special subjects of study, are given at intervals throughout the year by well-known clergymen and others of the vicinity.

The most noted divines of New England officiate every Sunday within easy distance, and may be studied by the student in respect to their teachings and their methods. It is the policy of the School to encourage the judicious use of these important instrumentalities of culture.

LICENSE TO PREACH

The regular time for applying for licensure is a year and a half before graduation. Before that time the members of the Theological School are not allowed to preach.

BUILDINGS FOR THE USE OF THE THEOLOGICAL SCHOOL

The building formerly known as Middle Hall has been entirely remodelled and fitted for the use of the Theological School under the name of Packard Hall. It contains five well-lighted lecture rooms, a chapel, a library, and offices for the members of the faculty.

Paige Hall, the dormitory of the Theological School, contains thirty-six single rooms, heated by steam and lighted by gas and electricity. Each room is provided with all necessary furniture — except sheets, blankets, pillow-cases, and towels.

EXPENSES AND PECUNIARY AID

Students in the Theological School are charged *one hundred dollars* annually for tuition. This charge includes the privilege of occupying a room in Paige Hall, and provision for heating and caring for it.

The following scholarships are assigned exclusively to theological students; certain prizes are also available under conditions, especially as described under "General Information."

The General Convention of Universalists aids students by free scholarships, not exceeding one hundred and twenty-five dollars a year to any one student, subject always to the recommendation of the Faculty of the Theological School. Those students, also, who are in the regular course are permitted to preach, under the direction of the Faculty, during the year-and-a-half preceding their graduation. In this way they may add to their pecuniary resources.

THE GREENWOOD SCHOLARSHIP.—The income of one thousand dollars, bequeathed by the late Mrs. Eliza M. Greenwood, of Malden, is given to that member of the advanced class in homiletics who, maintaining a high standard of work as a student, has made in all the work in Homiletics and Oratory the most satisfactory progress.

THE JOHN MURRAY SPRAGUE AND ELIZA FLETCHER SPRAGUE SCHOLARSHIP.—The income of two thousand dollars, bequeathed by the late John M. Sprague, is appropriated to the aid of needy and deserving students in the Crane Theological School, preference being given to any student, otherwise eligible, who is a direct descendant of the donor's father, John Sprague.

THE DOCKSTADER SCHOLARSHIP.—The income of ten thousand dollars, given by George A. Dockstader, of New York, is appropriated to the aid of needy and worthy students.

The following scholarships amount to fifty dollars each:—

THE WHITTEN SCHOLARSHIP.—Founded by Mrs. Maria F. Whitten, of Cambridge.

THE HOLT SCHOLARSHIP.—Founded by Miss Celia Holt, of Stafford, Conn.

THE HENRY L. BALLOU SCHOLARSHIP.—Founded by Susan Ballou, of Woonsocket, R. I.

TWO BRADLEE SCHOLARSHIPS.—Founded by the late Caleb D. Bradlee, D.D., of Brookline.

TWO GOLDTHWAITE SCHOLARSHIPS.—Founded by the late Willard Goldthwaite, of Salem.

THE SARAH ELIZABETH PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of Brooklyn, N. Y.

TWO LUCIUS R. PAIGE SCHOLARSHIPS.—Founded by the late Lucius R. Paige, D.D., of Cambridge, Mass.

TWO ANN M. PAIGE SCHOLARSHIPS.—Founded by the late Ann M. Paige, wife of the late Rev. Lucius R. Paige, of Cambridge, Mass.

FOUR CATHERINE CONANT SCHOLARSHIPS.—Founded by the late Mrs. Catherine Conant, of Newark, N. J.

The income of five hundred dollars, given by REV. JOHN VANNEVAR, is used in the purchase of books for the Department of Homiletics.

JACKSON COLLEGE

Faculty of Jackson College

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT

MRS. CAROLINE S. DAVIES, A.B., DEAN
Professor of Greek

PHILIP M. HAYDEN, A.B., SECRETARY
Professor of French

LIZZIE MAUD CARVILL, A.B., M.D.
Instructor in Physical Training

The instructing staff is identical with that of the School of Liberal Arts of Tufts College.

Standing Committees

ADMISSIONS: Dean Davies, *Chairman;* Professors Wren and Hayden

ABSENCES AND PETITIONS: Dean Davies, *Chairman;* Professor Hayden.

SCHOLARSHIPS AND AIDS: President Hamilton, *Chairman;* Dean Davies, Professors Wren, Anthony, and Hayden.

CATALOGUE: Professor Hayden, *Chairman;* Dean Davies, Professors Wren and Anthony, Dr. Briggs.

STUDENT EMPLOYMENT: Professor H. G. Chase, *Chairman;* Dean Davies, Professor Hayden.

PROMOTIONS: Dean Davies, *Chairman;* Professors ———, Wren, Fay, and Metcalf.

ADVISORY COMMITTEE ON WOMEN'S ATHLETICS: Dr. Carvill, *Chairman;* Dean Davies, Miss Ruth Tousey, '00, and Miss Charlotte J. Waterman, '12.

Jackson College

Jackson College for Women was authorized by act of the Legislature of Massachusetts in 1910, and was opened on September 22nd of the same year. It is a further step in the development of the work of Tufts College in providing for the collegiate education of women. The beginning was made when Tufts opened all its courses to women on the same terms as to men in 1893. Sixteen years of experience seemed to show that it was possible to do still better work for women than was being done under a system of co-education. Application was made to the Legislature for the necessary charter amendments, and a fully organized and equipped college for women under direction of the Trustees of Tufts College, and under the instruction of the Faculty of Tufts is the result. Jackson College is therefore able to offer to its students a combination of the advantages of a woman's college and a co-educational college with comparative freedom from the peculiar disadvantages of each system.

ADMISSION

The requirements for admission for candidates for A.B or B.S., and for special students are the same as for admission to the School of Liberal Arts. Certificates are accepted from schools on the list approved by the New England College Entrance Certificate Board. Candidates entering by examination may present the examinations of the College Entrance Examination Board given in June, or those given by Tufts College in September.

INSTRUCTION

The courses offered in Jackson College are identical with those offered in the School of Liberal Arts; and are given by the same instructing staff, but in separate divisions, except in some of the higher courses of small registration.

DEGREES

The requirements for the degrees of A.B. or B.S. are the same as in Tufts College. The diploma is certified over the signature of the President and Secretary of the Trustees of Tufts College as similar and equal to that issued under like name and upon similar conditions to the students of Tufts College.

Women who were registered in Tufts College before the establishment of Jackson College may, if they choose, receive the degree from Tufts.

GRADUATE WORK

No graduate courses are offered in Jackson College, but women are admitted to the Graduate School of Tufts College.

EXPENSES

The tuition charges and incidental expenses are the same as in Tufts College. Room rent varies from $40 to $85, according to the location of rooms.

REGISTRATION, REGULATIONS, ETC.

Full information concerning the administration and organization of Jackson College will be found in a special pamphlet to be had on application to the Dean or the Secretary of Jackson College, Tufts College, Mass.

SCHOLARSHIPS

In addition to the Scholarships named below, a certain proportion of the Scholarship funds of Tufts College has been set apart for the students of Jackson College. The conditions and form of application are the same.

FIVE JOHN AND LUCY H. STOWE SCHOLARSHIPS.—Five scholarships for women students, founded by the late Mrs. Lucy H. Stowe of Lawrence.

TWO MARY AND LUTHER GILBERT SCHOLARSHIPS.—Founded by Mrs. Mary G. Knight, of Roxbury, for the benefit of women.

ALPHA OMICRON PI PRIZE SCHOLARSHIP.—Founded by the alumnæ of the Tufts Chapter of Alpha Omicron Pi, and given to that woman in the senior class who shall have made the best record in the prescribed work of the A. B. Course.

ALPHA XI DELTA PRIZE SCHOLARSHIP.— Founded in 1910 by the Lambda chapter of Alpha Xi Delta and given to that woman who, at the end of the Junior year, holds the highest rank in the Course of Teaching. (During the years 1911–12 and 1912–13 the amount of this scholarship, $50, will be assigned at the discretion of the Dean to a deserving student.)

FUNDS FOR WOMEN

The Woman's Universalist Missionary Society of Massachusetts maintains a fund which is loaned to deserving women students, in sums of one hundred dollars, at four per cent. This fund now amounts to about six thousand dollars.

The Hettie Lang Shuman Memorial Fund was founded by Mr. A. Shuman, who presented one thousand dollars to the College, in memory of his wife. The interest of this fund is annually expended in aiding deserving women students.

The Massachusetts Society for the University Education of Women has at its disposal a small loan fund, and also a limited amount of money devoted to scholarship purposes for regular young women students in the upper classes. Inquiries concerning both of these may be made of the Dean.

BUILDINGS

Miner Hall contains the office of the Dean, class rooms, reception and locker rooms, bookstore, etc.

The Library and laboratories are used in common with Tufts College for the present.

The daily chapel service is held in Goddard Chapel at 8.30,

Dormitory accommodations are provided for the exclusive use of women in Metcalf Hall, Start House, and Richardson House.

Students of Jackson College are required to reside in the dormitories or with their families.

THE MEDICAL SCHOOL

Faculty of the Medical School*

FREDERICK WILLIAM HAMILTON, A.M., D.D, LL.D.
PRESIDENT — Tufts College

HAROLD WILLIAMS, A.B., M.D., LL.D. . . . . 528 Beacon St.
DEAN, *and Professor of the Theory and Practice of Medicine*

FREDERIC MELANCTHON BRIGGS, A.B., M.D. 31 Massachusetts Ave.
Professor of Clinical Surgery and Secretary of the Faculty

JOHN LEWIS HILDRETH, A.M., M.D., LL.D. . . . 14 Garden St.
Professor of Clinical Medicine, Emeritus — Cambridge

ERNEST WATSON CUSHING, A.B., M.D., LL.D. 168 Newbury St.
Professor of Abdominal Surgery and Gynaecology

EDWARD OSGOOD OTIS, A.B., M.D. . . . . 381 Beacon St.
Professor of Pulmonary Diseases and Climatology

MORTON PRINCE, A.B., M.D. LL.D. . . . . 458 Beacon St.
Professor of Diseases of the Nervous System

FRANK GEORGE WHEATLEY, A.M., M.D. . . . North Abington
Professor of Materia Medica and Therapeutics

HENRY BECKLES CHANDLER, C.M., M.D. . . . 34½ Beacon St.
Professor of Ophthalmology

JAMES SULLIVAN HOWE, M.D. . . . . 437 Marlborough St.
Professor of Dermatology

EDWARD BINNEY LANE, A.B., M.D. . . . . 419 Boylston St.
Professor of Mental Diseases

EDWARD MAVERICK PLUMMER, M.D. 5 Adams St., Charlestown
Professor of Otology

GEORGE HAMLIN WASHBURN, A.B., M.D. . 377 Marlborough St.
Professor of Obstetrics

JOHN JENKS THOMAS, A.M., M.D. . . . . 88 Bay State Road
Assistant Professor of Neurology

JOHN LINCOLN AMES, A.B., M.D. . . . . 70 Chestnut St.
Associate Professor of the Theory and Practice of Medicine

* The names of the Faculty of Medicine, after the President, the Dean, and the Secretary, are arranged in the order of academic seniority. The post-office address is Boston, Mass., unless otherwise indicated.

WILLIAM ELISHA CHENERY, A.B., M.D. . . 222 Huntington Ave.
Professor of Laryngology

CHARLES MELVILLE WHITNEY, M.D. . . . . 591 Tremont St.
Professor of Genito-Urinary Diseases

GEORGE ANDREW BATES, M.Sc., D.M.D. . . . . Auburndale
Professor of Histology

EUGENE THAYER A.M., M.D. . . . 2683 Washington St., Roxbury
Demonstrator of Anatomy

GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D. 6 Mason St.
Professor of Physiology Cambridge

GEORGE WARTON KAAN, M.D. . . . . 419 Boylston St.
Professor of Clinical Gynaecology

CHARLES FAIRBANK PAINTER, A.B., M.D. 372 Marlborough St.
Professor of Orthopedic Surgery

WILLIAM ROBIE PATTEN EMERSON, A.B., M.D. 657 Boylston St.
Assistant Professor of Children's Diseases

EDWARD NORTON LIBBY, A.B., M.D. . . . . 1990 Columbus Ave.
Assistant Professor of Theory and Practice of Medicine

CHARLES DAVISON KNOWLTON, M.D. . 574 Warren St., Roxbury
Assistant Professor of the Theory and Practice of Medicine

ALFRED WILLIAM BALCH, PH.G., M.D. . 44 Linden St., Brookline
Assistant Professor of Medical Chemistry and Toxicology

TIMOTHY LEARY, A.M., M.D. . . . 44 Burroughs St., Jamaica Plain
Professor of Pathology and Medical Jurisprudence

FRANK LEE DRUMMOND RUST, M.D. . . . . 755 Boylston St.
Associate Professor of Ophthalmology

HARRY HOMER GERMAIN, M.D. . . . . 416 Marlborough St.
Assistant Professor of Anatomy

OLGA CUSHING-LEARY., M.D. . . 44 Burroughs St., Jamaica Plain
Assistant Professor of Pathology and Bacteriology

OTHER INSTRUCTORS

WILLIAM SCHOFIELD, A.M., LL.B. . . . 136 Summer St., Malden
Lecturer in Medical Jurisprudence

WALTER ELMORE FERNALD, M.D. . . . . Waverley
Clinical Lecturer in Mental Diseases

EDWARD LAMBERT TWOMBLY, A.B., M.D. 416 Marlborough St.
Instructor in Clinical Gynaecology

BENJAMIN TENNEY, A.M., M.D. . . . . 308 Marlborough St.
Instructor in Surgery

FRANCIS JOSEPH KELEHER, A.M., M.D. 1345 Center St., Newton
Instructor in Medical Jurisprudence

ELMOND ARTHUR BURNHAM, A.B .M.D., . 144 Huntington Ave.
Instructor in Clinical Medicine

CHARLES BALFOUR DARLING, A.B., M.D. . . 27 Rockville Park
Instructor in Abdominal Surgery and Clinical Gynaecology Roxbury

HARRY GRAY CHASE, B.S. . . . . Tufts College
Lecturer in Physics

RICHARD FITCH CHASE, M.D. . . . . 419 Boylston St.
Instructor in Clinical Medicine and Lecturer on Gastro-Intestinal Diseases

ARTHUR WILLARD FAIRBANKS, M.D. . . . . 591 Beacon St.
Instructor in Neurology

JOHN SHEPARD MAY, A.B., M.D. . . . . 495 Warren St.
Instructor in Obstetrics

WILLIAM PEARCE COUES. M.D. . . . . 31 Massachusetts Ave.
Instructor in Clinical Surgery

FRANCIS DENNIS DONOGHUE, M.D. . . . . 864 Beacon St.
Instructor in Clinical Surgery

THOMAS FRANCIS GREENE, M.D. . . . . 322 Warren St.
Assistant in Obstetrics

FREDERICK WINSLOW STETSON, A.B., M.D. . . 504 Warren St.
Assistant in Clinical Medicine

EDWARD ELIPHALET THORPE, M.D. . . . . 711 Boylston St.
Instructor in Chemical Pathology

HENRY FOWLER RANSFORD WATTS, M.D. . 6 Monadnock St.
Instructor in Clinical Medicine Dorchester

ARTHUR LAMBERT CHUTE, M.D. . . . . 350 Marlborough St.
Instructor in Genito-Urinary Diseases

THEODORE CHARLES ERB, M.D. . . . . 159 St. Botolph St.
Instructor in Obstetrics

GEORGE HALE RYDER, PH.B., M.D. . . . . 719 Boylston St.
Assistant in Ophthalmology

JOSEPH HENRY SAUNDERS, A.B., M.D. 356 Harvard St., Brookline
Instructor in Clinical Medicine

JOHN PETER TREANOR, M.D. . . . . 3 Howes St., Dorchester
Instructor in Clinical Medicine

FRANK PERCIVAL WILLIAMS, M.D. . . . . 419 Boylston St.
Instructor in Rectal Diseases

GUY MONROE WINSLOW, A.B., PH.D. . . . . 145 Woodland Rd., Auburndale
Instructor in Histology

THEODORE CHAPIN BEEBE, A.B., M.D. . . 416 Marlborough St.
Instructor in Surgery

WILLIAM HERBERT GRANT, M.D. . . . . 293 Newbury St.
Instructor in Clinical Gynaecology

JOSEPH LIGNE LOCKARY, C.M., M.D. . 108 Warren St., Roxbury
Assistant in Obstetrics

STEPHEN RUSHMORE, A.B., M.D. . . . . 407 Marlborough St.
Instructor in Clinical Gynaecology

JOHN THOMAS SULLIVAN, M.D. . . . . 139 Beacon St.
Assistant in Laryngology

SAMUEL WRIGHT CRITTENDEN, M.D. Austin and Harvard Sts., Dorchester.
Assistant in Mental Diseases

JAMES WILLIAM HINCKLEY, M.D. . . . . 419 Boylston St,
Instructor in Clinical Gynaecology

GEORGE COLTON MOORE, A.B., M.D. . . . . 543 Boylston St.
Assistant in Orthopedics

FREEMAN AUGUSTUS TOWER, A.B., M.D. . . Burbank Hospital, Fitchburg
Lecturer in Neuropathology

ROBERT EATON ANDREWS, A.B., M.D. . 1044 Massachusetts Ave. Cambridge
Assistant in Physiology

ELWOOD TRACY EASTON, M.D. . . . . 209 Newbury St.
Instructor in Ophthalmology

FRANK BUTLER GRANGER, A.B., M.D. . . . . 591 Beacon St.
Instructor in Electro-Therapeutics

HENRY DEMAREST LLOYD, A.B., M.D. . . . . 657 Boylston St.
Assistant in Clinical Surgery and Assistant Demonstrator of Anatomy

GEORGE ALBERT McEVOY, M.D. . . . . 153 Newbury St.
Assistant in Clinical Medicine

LUTHER GORDON PAUL, M.D. . . . . 321 Beacon St.
Instructor in Clinical Surgery and Assistant Demonstrator of Anatomy

WILLIAM LAWTON THOMPSON, A.B., M.D. . 57 Addington Road
Instructor in Obstetrics and Assistant in Bacteriology Brookline

ELMER WALTER BARRON, A.B., M.D. . . 300 Pleasant St., Malden
Instructor in Children's Diseases

HORACE KEITH BOUTWELL, B.S., M.D. . . 416 Marlborough St.
Instructor in Clinical Medicine

HARRY LINENTHAL, A.B., M.D. . . . . 442 Warren St., Roxbury
Assistant in Pulmonary Diseases

GEORGE LOUIS VOGEL, M.D. . . . . 90 Exeter St.
Assistant in Laryngology

LOUIS ARKIN, B.S., M.D. . . . . 366 Commonwealth Ave.
Assistant in Laryngology

WALTER FREEMAN NOLEN, M.D. . . . . 535 Beacon St.
Instructor in Anatomy

TIMOTHY JOSEPH SHANAHAN, A.B., M.D. . . 419 Boylston St.
Assistant in Laryngology

WALTER BABCOCK SWIFT, A.B., M.D. . . . . 110 Bay State Rd.
Assistant in Neurology

JOHN DRESSER ADAMS, M.D. . . . . 915 Boylston St.
Assistant Demonstrator of Anatomy

FRANKLIN EDWARD CAMPBELL, M.D. . 414 High St., Medford
Instructor in Chemical Pathology and Toxicology

EDWARD KEITH ELLIS, M.D. . . . . 101 Newbury St.
Assistant in Ophthalmology

HERBERT SEYMOUR GAY, M.D. . . . . 1087 Boylston St.
Assistant in Clinical Gynaecology

PEREZ BRIGGS HOWARD, M.D. . . . 340 Walnut St., Newtonville
Assistant in Clinical Medicine

BRADFORD KENT, M.D. . . . . 798 Blue Hill Ave., Dorchester
Assistant in Pulmonary Diseases

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Assistant in Clinical Gynaecology

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Instructor in Pharmacology and Assistant Demonstrator of Anatomy

ARTHUR CUSHING PEARCE, M.D. . . . . 543 Boylston St.
Instructor in Genito-Urinary Diseases

CADIS PHIPPS, A.B., M.D. . . . . 483 Beacon St.
Instructor in Hematology

FREDERICK REIS, M.D. . . . . 3 Nelson St., Dorchester
Instructor in Chemical Pathology and Toxicology and Assistant Demonstrator of Anatomy

DANA WARREN DRURY M.D. . . . . 101 Newbury St.
Assistant in Otology

HYMAN MORRISON, A.B., M.D. . . . . 103 Glenway St., Dorchester
Assistant in Hematology

JOHN THOMAS WILLIAMS, M.D. . . . . 483 Beacon St.
Assistant Demonstrator of Anatomy

LOUIS ADOLORE OLIVER GODDU, PH.G., M.D. . 407 Marlboro St.
Assistant in Orthopedics

SELSHAR MICHAEL GUNN, S.B. . . . Mass. Inst. of Technology
Lecturer in Hygiene

RICHARD HENRY HOUGHTON, M.D. . 308 Sumner St., E. Boston
Assistant in Pulmonary Diseases

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Assistant in Genito-Urinary Diseases

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Assistant in Pulmonary Diseases

ANDREW THADDEUS BARSTOW, M.D. . . . 52 Westland Ave.
Assistant in Clinical Gynecology

JAMES FRANCIS COUPAL, B.S., M.D. . . 15 Gladstone St., Everett
Assistant in Pathology and Bacteriology

ALBERT JOHN ADAMS HAMILTON, M.D. . . . 409 Marlboro St.
Assistant Demonstrator of Anatomy

ANDREW PAYNE CORNWALL, M.D . . . . . 483 Beacon St.
Instructor in Orthopedics

GAETANO PRAINO, M.D. . . . . 419 Boylston St.
Assistant in Clinical Medicine

ELWIN HARRISON WELLS, M.D. . . . . 30 Avon St., Wakefield
Instructor in Physiology

GEORGE RUSSELL CALLENDER, M.D. . . . . 424 Newbury St.
Instructor in Pathology and Bacteriology

HARRY HOWARD FLAGG, M.D. . . . . 30 Elm St., Charlestown
Assistant in Physiology

JOSEPH EDWARD HALLISEY, M.D. . . 9 Magazine St., Cambridge
Assistant in Hematology

GEORGE FRANCIS McINTIRE, M.D. . . . 5 Dana St., Cambridge
Assistant Demonstrator of Anatomy

SOLOMON HYMAN RUBIN, M.D. . . . . 10 Hancock St.
Assistant Demonstrator of Histology

WINTHROP SHIRLEY BLANCHARD, M.D. . . 480 Columbus Ave.
Instructor in Pathology and Bacteriology

GEORGE HENRY SCOTT, M.D. . . . . 202 Warren St.
Assistant Demonstrator of Anatomy

GEORGE PIERCE TOWLE, M.D. . . . . 407 Marlborough St.
Assistant Demonstrator of Anatomy

JOHN ROBERT WHITE, M.D. . . . . 166 Washington St., Lynn
Assistant Demonstrator of Anatamy

OTHER OFFICERS

EDMUND WILBUR KELLOGG . . . . . 24 Milk St., Boston
Assistant Treasurer

EUGENE EVERETT SHEPARD . . . 43 Boston Ave., W. Medford
Bursar

LINA A. MAYO . . . . . Milton
Stenographer

LILLIAN M. TATTAN . . . . . Somerville
Clerk to Secretary

STANDING COMMITTEES OF THE MEDICAL SCHOOL

The Dean and the Secretary are members of all Committees, *ex officiis.*

ADMINSTRATION. — The President, Drs. Wheatley, Leary, and Painter.

NOMINATIONS. — Drs. Wheatley, Lane, and Whitney.

LIBRARY. — Drs. Otis, Howe, and Cushing.

COURSE OF INSTRUCTION. — Drs. Leary, Ames, Bates, and Painter.

ADMISSION. — Drs. Leary, Dearborn, Germain, and Professor Hayden.

WOMEN'S ADVISORY COMMITTEE. — Drs. Elizabeth A. Riley, Olga Cushing-Leary, and Edna Weil-Dreyfus.

Student Government Board

The members for the current year of the Student Government Board of the Medical and Dental Schools are as follows: —

CHAIRMAN

Philip E. A. Sheridan, M '12

SECRETARY

Richard J. Fitzgerald, D '12

MEDICAL SCHOOL:

William T. Haley, '12
John J. Deacy, '13
Henry L. Davis, '14
William V. Kane, '15

DENTAL SCHOOL:

Chester E. Cleaves, '12
Joseph F. Sullivan, '13
Ralph H. Miller, '14

Tufts College Medical School

416 Huntington Avenue

Boston, Mass.

Tufts College Medical School was established in Boston in 1893. It is co-educational, women being admitted upon the same terms as men. In its first year there were six members of the Faculty, and seventeen other instructors, or twenty-five in all. In the session 1911-12, there are thirty members of the Faculty and eighty-two other instructors, or one hundred and twelve in all. In its first year there were eighty students; in the session 1911-12 there are 338 students. In its first year there was one clinic connected with the school; in the session 1911-12 there are sixteen clinics. The school was first located in rooms at 188 Boylston Street, where it remained three years, when an enrollment of 174 students made larger quarters necessary. Temporary accommodations were procured for the session 1896-97 in the building formerly occupied by the Chauncy Hall School, while a building was in process of construction on Shawmut Avenue. This building was occupied in the session 1897-98, and it was believed that it would meet the school's needs for a number of years. At the end of three years this building was found to be inadequate to the constantly increasing number of students, and to the constantly increasing requirements of medical education. A new building was erected on Huntington Avenue, and was occupied in the session 1901-02. Increasing requirements having necessitated more commodious quarters, the building has been enlarged and remodeled at an expense of $50,000. A fourth story has been added, and the building is now completely equipped with every facility for teaching Medicine in accordance with present requirements. There are six lecture rooms, the largest seating 400, the smallest seating 100, and each having the most modern seating arrangement. On the second, third, and fourth floors,

extensive laboratories have been provided which give every facility for teaching Pathology, Bacteriology, Physiology, Histology, Chemical Pathology, Chemical Physiology, Neuropathology, Hematology and Pharmacology. Private research laboratories are connected with each general laboratory. The building has been made complete in every respect. It is heated and ventilated throughout by both the direct and indirect system, and is lighted by electricity. The laboratories have been arranged to give the best natural light. The lecture rooms have been planned to combine modern seating arrangements with the best acoustic properties, and are thoroughly equipped with opaque projection and lantern slide apparatus. The building is on the line of the Huntington Avenue Subway cars (except the Roxbury and Dorchester lines). All exercises are conducted at the school building in Boston and at the hospitals.

General Information

CLINICAL ADVANTAGES

Boston, as the largest city in New England, offers unusual facilities to the student of medicine. The amphitheatres of the Boston City Hospital, the Massachusetts General Hospital, and the Massachusetts Charitable Eye and Ear Infirmary, are open to students, and opportunity is thus afforded for witnessing the more extensive surgical operations.

Clinics are held at the Boston City Hospital, Boston Consumptive Hospital, Boston Dispensary, Boston Insane Hospital, Carney Hospital, Grace Hospital, Free Home for Consumptives, Dispensary for Women, House of the Good Samaritan, Massachusetts Charitable Eye and Ear Infirmary, Massachusetts School for Feeble Minded, Massachusetts State Sanatorium for Treatment of Tuberculosis, Mount Sinai Hospital, St. Elizabeth's Hospital, St. Mary's Infant Asylum, Tremont Dispensary, and at various private clinics.

SESSIONS OF THE SCHOOL

The annual course of lectures begins on the last Wednesday in September of each year, and continues thirty-six weeks until the second Wednesday in June. The annual course of lectures for 1912-13 will commence Wednesday, September 25, 1912, at 3 o'clock P.M.

VACATIONS

There are no exercises at the School during three days at Thanksgiving, ten days at Christmas, and the week beginning March 31, 1912, nor upon Columbus Day, Washington's Birthday, Patriots' Day and Memorial Day.

OUTLINE OF THE COURSE

The course of study is a graded one, covering four annual sessions. In general the first two years consist of didactic and laboratory work; the last two years are chiefly clinical. During the latter part of the fourth year a certain latitude is allowed in the choice of elective subjects, but the course is otherwise uniform and the required subjects cover thoroughly the general ground of medicine, surgery, and the important special subjects.

For the first three years the school session is divided into two semesters of seventeen weeks each.

First Year

First Semester

Anatomy.—Lectures, recitations, demonstrations, and dissecting, *Twenty eight hours a week.*

Second Semester

Applied Anatomy.—Lectures and demonstrations. *Two hours a week.*

Histology.—Lectures, recitations, demonstrations, and laboratory work. *Nine hours a week.*

Physiology.—Lectures, recitations, demonstrations, conferences, and laboratory work. *Twenty hours a week.*

Second Year

First Semester

Pathology.—Lectures, recitations, demonstrations, and laboratory work. *Twenty-five hours a week.*

Bacteriology.—Lectures, recitations, demonstrations, and laboratory work. *Five hours a week.*

Embryology.—Lectures, recitations, and laboratory work. *Three hours a week.*

Second Semester

Chemical Pathology.—Lectures, recitations, demonstrations, and laboratory work. *Seventeen hours a week.*

Materia Medica and Therapeutics.—Lectures, recitations, and laboratory work in Pharmacology. *Twelve hours a week.*

Toxicology.—Lectures, recitations, demonstrations, and laboratory work. *Three hours a week.*

Bandaging and Surgical Technique.—Lectures, demonstrations, and section exercises. *Twenty-four hours in all.*

The following subject is given throughout the school year:

Physical Diagnosis. — Lectures, demonstrations, recitations and section exercises. *Forty-eight hours in all.*

Third Year

The following subjects are given throughout the school year:

Theory and Practice.— Lectures, and recitations. *Three hours a week.*

Surgery.—Lectures and recitations (three hours), and two clinical lectures. *Five hours a week.*

Obstetrics.—Lectures, recitations, and demonstrations. (Attendance upon at least four cases of labor is required — see "clinics," below.) *Three hours a week.*

Diseases of Children.—One lecture at the school and one clinical lecture. *Two hours a week.*

Medical Diagnosis.—*Clinical lecture. *One hour a week.*

Ophthalmology.— *Twenty-four lectures.*

Laryngology.— *Twenty-four lectures.*

First Semester

Hygiene and Sanitation.— Lectures. *Two hours a week.*

Neurology.—*One *clinical lecture a week.*

Neuropathology.—*Sixteen lectures and eight hours of laboratory work.*

Second Semester

Hematology.—*Sixteen lectures and twenty-four hours of laboratory work.*

* Clinical lectures are given at the hospitals connected with the School.

Pulmonary Diseases and Climatology.—*One clinical lecture* a week.*

Gynaecology.—Lectures and recitations. *Three hours a week.*

Genito-Urinary Diseases.—*Sixteen lectures.*

CLINICS

In addition to the above exercises, the students of the third year attend clinics, in sections, in the following subjects: —

Clinical Medicine;
Clinical Surgery;
Obstetrics (each student is required to take charge of at least four cases of childbirth);
Children's Diseases;
Pulmonary Diseases;
Ophthalmology;
Laryngology

The work in clinics averages *twelve hours a week for the year.*

Each student is required to serve one month as assistant at a clinic in the surgical department of an approved hospital.

Fourth Year

The fourth year is divided into three periods: —

The first period (twelve weeks) ends at the Christmas recess. The second period (thirteen weeks) ends at the spring recess. The third period (six weeks) follows the spring recess.

The work of the fourth year is both required and elective. It is essentially clinical and largely in sections.

The required work includes a continuation of the clinical work in the general subjects of medicine and surgery, and a grounding in the essentials of those specialties which have not been studied in the third year. The most of these special subjects are completed before the Christmas recess.

The elective work is a continuation of the work of the required course along selected lines. The student is required to take a certain amount of work, but may exercise his choice as to what he will elect from a large number of subjects offered.

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* Clinical lectures are given at the hospitals connected with the School.

Required Subjects

Class Exercises

Clinical Medicine (including Pulmonary Diseases).—Lectures and conferences at the School (two hours), and clinical lectures (three hours). *Five hours a week, thirty weeks.*

Clinical Surgery.—Lectures and conferences at the School (two hours), and one clinical lecture and operations (two hours). *Four hours a week, thirty weeks.*

Orthopedic Surgery.—Lectures, recitations, and demonstrations. *Three hours a week, thirty weeks.*

General Medicine.—Lectures and recitations. *Two hours a week, thirty weeks.*

Abdominal Surgery.—Lectures and recitations. *Three hours a week, sixteen weeks.*

Neurology.—One conference at the School and two clinical lectures each week. *Three hours a week, sixteen weeks.*

Psycho-Pathology.—Lectures. *Two hours a week during second period (twelve weeks).*

Children's Diseases.—Lectures and conferences. *One hour a week, thirty weeks.*

Otology.—Clinical lectures. *Two hours a week during first period (twelve weeks).*

Rectal Diseases.—Lectures. *One hour a week during first period (twelve weeks).*

Operative Obstetrics.—*Eighteen hours during the second period.*

Electro-Therapeutics.— Lectures. *One hour a week during first period (twelve weeks).*

Clinical Gynecology.—*Clinics (in small sections) *during first and second periods (twenty-five weeks).* Conferences *once a week during second period (thirteen weeks).*

Medical Jurisprudence.—Lectures and demonstrations. *One hour a week during first and second periods (twenty-five weeks).*

Dermatology.—*Clinical lectures. *Two hours a week during second and third periods (eighteen weeks).*

Operative Surgery and Surgical Anatomy.—This course is a sub-division of Clinical Surgery, and consists of lectures, demonstrations, and section work in operations on the cadaver. *Three hours a week for twelve weeks (second and third periods).*

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*Clinical lectures are given at the hospitals connected with the School.

Mental Diseases.—Lectures and clinical visits at hospitals for the insane *Two hours a week during second and third periods (eighteen weeks).*

Genito-Urinary Diseases. — *Clinics during first period in sections. (*Twenty-four hours — see below.*)*

Clinical Work in Sections

Twelve hours a week are assigned to clinical work in sections throughout the year. This work is given, as far as possible, in close relation to the instruction in each subject, and the time assigned is proportioned to the importance of the subject. The minimum assignment is *twenty-four hours*—in the special subjects of the first period. This is supplemented in the second and third periods by further clinical work in those subjects that the student elects. The clinics in Clinical Medicine and Clinical Surgery extend throughout the year. The other clinics include the subjects of:—

Neurology; Children's Diseases; Pulmonary Diseases; Orthopedic Surgery; Abdominal Surgery; Clinical Gynaecology; Otology; Dermatology; Electro-Therapeutics; Genito-Urinary Diseases; Medico-legal autopsies.

ELECTIVE SUBJECTS

Elective subjects are classified according to the amount of time occupied by each course. Twelve hours of lectures or clinics constitute one point. Each student is required to choose 4 points of electives.

The elective courses for the session 1911-12 are classified as follows:

Neurology	3 points	Otology	2 points
Laryngology	3 points	Pathological Technique	2 points
Clinical Gynecology	2 points	Gastro-Intestinal Diseases	1 point
Dermatology	2 points	Pulmonary Diseases	1 point
Genito-Urinary Diseases	2 points	Mental Diseases	1 point
Ophthalmology	2 points	Rectal Diseases	1 point

The examination in an elective subject lasts one, two, or three hours, according as the course counts one, two, or three points.

* Clinical lectures are given at the hospitals connected with the School.

Summary of Time

First Year	1100 hours
Second Year	1100 hours
Third Year	1050 hours
Fourth Year	1150 hours
Total	4400 hours

EXAMINATIONS

1. For Entrance

Examinations for admission may be taken in June at any of the places announced by the College Entrance Examination Board (for a list and application forms, address the Secretary of the Board, P. O. Sub-station 84, New York, N. Y.); or in September at Tufts College, Mass. (See page 263.)

2. Promotion

The regular examinations for promotion on the subjects of the First, the Second, and the Third Year, are held at the end of each course.

3. For Graduation

The regular examinations for graduation are held during the Fourth Year at three periods, and follow the termination of each of the three periods into which this year is divided. At each of these periods examinations will be held in those subjects, required or elective, which end at that time.

4. Fall Examinations

The regular fall examinations will commence Monday, September 9, 1912, at 10 o'clock A.M., at the Medical School Building, and are given for the following purposes: —

(*a*) For students from other medical schools applying for advanced standing.

(*b*) For the removal of conditions (other than entrance.)

Students intending to take the fall examinations (other than for entrance) are required to notify the Secretary on or before Saturday, Aug. 31, 1912.

In all examinations (except those for entrance) each student must register by signing his name to the registration blank provided for that purpose. If a student fails to register in this manner he shall receive no credit for that examination.

Subjects of Instruction

First Year Subjects

ANATOMY

The course in anatomy is given throughout the first year. During the first half-year there are five lectures and three recitations weekly with the class. In the month of October, thirty hours additional are devoted to demonstrations in Osteology. There are also special demonstrations by the instructors in the difficult parts of the work. In the dissecting room each student is required to dissect three parts, to the satisfaction of the Demonstrator of Anatomy, before taking the final examination. It is necessary for every student to dissect three parts before graduation. Record of attendance and of the quality of the work done in the dissecting room will be kept, and will largely determine the standing of the student in the class.

During the second half-year there are two exercises each week, one hour for applied surgical anatomy and one hour for applied medical anatomy.

PHYSIOLOGY

The course in physiology is given throughout the latter half of the first year. It constitutes half of the entire work required of the student during that period. The course consists of four recitations, four lectures, six hours of laboratory work, and one conference for every student, each week, together with the preparation of a technical written paper, and extra demonstrations. At the end of each month there is an important written examination.

In the recitations, familiarity with the subject-matter of an assigned text-book of physiology, and of the syllabus, is required. The lectures set forth the principles of general and descriptive physiology, and suggest some of its relations to the

allied sciences, especially anatomy. In the laboratory the student has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function, a specialty being made of an acquaintance with the nature of protoplasm. A strict practical examination may be held at the end of the year in the laboratory. The conferences give each student opportunity to become familiar with the literature on important interesting physiological topics, which are then presented in written reports and freely discussed by the whole class. Record both of the attendance and of the quality of the work done in the laboratory and recitation-room will be kept, and, with the conference, will largely help to determine the standing of the student in the class. In addition, a three-hour written examination covering the entire work of the year is held at the completion of the work, besides the important subsidiary written examinations, monthly, and weekly written tests.

A reviewing course in physics as related to physiology, given by the department of physics in the College of Letters, is a part of this course. This year the lectures and demonstrations are given by Professor Harry G. Chase.

Advanced and research work in physiology will be provided for competent students, by special arrangement with the head of the department. Work in this department is also offered to candidates for the degree of Master of Arts. The constant aim is to adapt the work of each student both to his needs and to his capabilities.

HISTOLOGY

The work in histology covers the second half of the school year, and is both didactic and practical. The practical work in the laboratory is emphasized. Here the student comes into the most intimate relation with the elements of the body, the legitimate objects of his study. He learns to use the microscope and to manipulate sections. Being required to draw what he sees, he forms a mental picture of the objects of study which he never forgets.

The department aims to bring before the student the latest utterance of the best authorities, and to present the subject from the standpoint of the medical student. It must be obvious that histology, dealing as it does with the tissue elements of the body in their normal condition, is vitally important in the study of pathology, when it is understood that it is morbid changes in these elements which constitute pathological conditions. The student's future study of pathology is kept constantly in mind, and the teaching of the department has a direct bearing upon that end. The department is furnished with microscopes, the use of which, on payment of a small fee, will be afforded to such as are unable to furnish instruments of their own.

Written exercises and recitations will form a part of the course. Ninety hours of laboratory work are required.

Second Year Subjects

PATHOLOGY

The work in pathology and bacteriology will occupy the attention of the students during the first half of the second year. The instruction in pathology will consist of lectures, recitations, demonstrations, and practical laboratory work. It will be the aim to develop in the student a thorough knowledge of the causes, course, and results of pathological processes. Daily lectures (five times a week) will be supplemented by daily recitations, based upon a syllabus covering the subjects of general pathology and special pathology.

Demonstrations of gross pathological specimens, obtained from operations and autopsies at the Boston City Hospital, the Massachusetts General Hospital, and other institutions, will be held frequently, as material is obtained. The supply of fresh material is very large, and it is usually possible to illustrate all of the common disease processes and many of the rare lesions,

during the time when the class is at work. Instruction in autopsy technique will be given in the amphitheatre of the School.

The work in pathological histology will include a three-hour exercise daily, five times a week. Students will mount and make drawings of sections obtained from human and experimental lesions, comprehending all the important subjects of general and special pathology. Considerable attention will be paid to surgical pathology. Preserved gross specimens illustrating the lesions studied will be demonstrated in connection with the laboratory exercises.

Written recitations will be held, without notice, at irregular intervals throughout the term. The standard attained by the student in these exercises will influence his final mark in the subject. Final examinations will be held at the end of the year, three hours of written and two hours of practical work. A report on gross specimens may be included.

Microscopes will be loaned to students for a small fee.

BACTERIOLOGY

Bacteriology is taught as a companion study with pathology. As infectious processes are taken up, the bacterial causes are studied in connection with the pathology of the diseases which they produce, in such a way that a comprehensive view of the cause and effect may be obtained. Attention is paid to the technical details of laboratory work. The methods of bacterial action, the elaboration of toxines, the subject of immunity, and the important bearings of asepsis, antisepsis, and disinfection are especially emphasized. Particular attention is also paid to all practical bacteriological tests used in medicine.

The bacteriological laboratory presents adequate facilities for the intelligent demonstration of this subject. In addition to the usual laboratory work, facilities are afforded students for individual work. In connection with the demonstration of gross pathological specimens, a study of bacteria present is made, both by smear and culture. The recitations in this subject will include both oral and written exercises, and practical examinations will be held throughout the year.

The final examination will consist of two hours of written and one hour of practical work. The practical examination will consist of the examination of an unknown specimen, requiring the application of a bacteriological test of clinical value.

EMBRYOLOGY

The subject of Embryology is given in the first half of the second year with three weekly exercises. The work will cover the science so far as to fit the student with knowledge sufficient for his studies in obstetrics and such other departments as may have to do with embryonic conditions. It is intended to give the student such practical features of the subject as will prove adequate for his needs as a student of medicine, without entering into the many details that tend to confuse and are not essential outside a regular course in biology.

PHARMACOLOGY

Instruction in pharmacology consists of lectures, recitations, and laboratory exercises, twelve hours a week throughout the second half-year. Especial attention is given to the physiological action of drugs in its relation to their therapeutical application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory course is designed to familiarize the student with all medicinal preparations and processes, and consists of exercises in which the class in sections is led to this result practically.

Prescription writing and the metric system will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

CHEMICAL PATHOLOGY

The course follows the general plan of the first year work in Chemical Physiology. Pathological secretions and excretions are studied in comparison with the normal. Special attention is given to the chemistry and microscopy of urine, feces and gastric contents. These subjects occupy a large part of the laboratory exercises.

Diagnosis of renal, gastric and intestinal diseases from chemical and microscopic findings is fully considered in both lectures and recitations.

OPTIONAL COURSE

Research Work in Chemical Biology. Students must obligate themselves to spend at least a half-year, and write a thesis upon the result of their investigation. This course is similar to that given in the Graduate School for the degree of Master of Arts.

TOXICOLOGY

The lecture and laboratory course in Toxicology is systematic and comprehensive. Students are required to determine the identity of various organic and inorganic poisons in stomach contents, tissues and in food.

In addition to the regular recitations, occasional conferences are held, at which cases of poisoning are discussed.

PHYSICAL DIAGNOSIS

This is an elementary course in the study of physical signs in health and disease, and is the foundation for the study of Clinical Medicine Special attention is given, in the explanation of physical signs, to the principles of physics, and to the facts of anatomy and physiology upon which they are based. The course follows the instruction in Medical Anatomy, part of the course in Applied Anatomy of the first year, and leads to the course in Medical Diagnosis in the third year. The course consists of one lecture a week throughout the second year (thirty-two lectures), and fifteen exercises in sections, chiefly on elementary percussion and auscultation.

BANDAGING AND SURGICAL TECHNIQUE

Bandaging and surgical technique is given to students of the second year, and consists of practical work in applying bandages, dressings, splints, etc. The course is preceded by lectures and demonstrations by the Demonstrator of Bandaging and Apparatus. Upon the conclusion of the lectures, each student receives

individual instruction in the subject, and must show himself skilled in this work before completing the course.

During the second semester a series of lectures will be given upon surgical technique.

The course is a part of the work in Surgery.

Third Year Subjects

THEORY AND PRACTICE OF MEDICINE

The work prescribed in the department of general medicine has been carefully planned. As the studies of the second year are intended to prepare the student for the study of the theory and practice of medicine, so this course is intended to prepare for the clinical courses of the fourth year. To this end a systematic series of lectures is offered, including such general diseases as are not considered in the special courses. Two hours a week are devoted to these lectures. They comprise a detailed description of each of the diseases under consideration. The diseases are discussed upon the uniform plan of a description of the affection, its synonyms, history, cause, pathological changes, symptoms, complications, diagnosis, prognosis, prevention and treatment. Supplementary to these lectures, a weekly quiz class is held. By such thorough and systematic study of the diseases he is to meet in the clinical work of the fourth year, the student is prepared to appreciate in the fullest degree the varying phenomena of daily practice.

SURGERY

The course in surgery of the third year consists of lectures covering the principles of general surgery, attendance at clinics, recitations, and written quizzes. The instruction in this year prepares the student for the courses of the fourth year in clinical, abdominal, rectal, genito-urinary, gynecological, and orthopedic surgery.

The class attends the lecture in clinical surgery at the Boston Dispensary, one morning each week from October 1 to April 1, where the time is principally devoted to demonstrating from the case the various conditions which a practitioner meets in general practice. So far as possible, cases are grouped, and one morning of each week is devoted to the consideration of a single subject, with many cases illustrating the condition under discussion.

The class, divided into small sections, attends the regular surgical clinics of the School each week throughout the school year at the Boston Dispensary, and the Grace Hospital.

At some time after the course in bandaging and surgical technique, but before graduation, each student must present a certificate stating that he has served satisfactorily as surgical dresser for at least one month in some institution approved by the Faculty. All students who have not already taken the course in bandaging must make arrangements with the demonstrator to complete this course before January 1 of the third year.

LARYNGOLOGY

Instruction in the diseases of the nose and throat is both didactic and clinical. A systematic course of lectures is given to the third-year students in the ampitheatre of the School. These lectures are illustrated with colored diagrams, models, pathological specimens, and the exhibition of instruments. The opaque-projection apparatus is used at the close of each lecture.

Clinical instruction in laryngoscopy and rhinoscopy is given to small sections of the class at the Boston Dispensary, the Boston City Hospital, and the Carney Hospital. This work is required.

An elective course, mainly practical, is given to the fourth-year students during the last half-year. Special attention is paid to the technique of instrumentation, also to general diagnosis and treatment. By the actual examination of cases the student is made familiar with the diseases the family physician

is expected to treat. During this course the students see the most important operations of the nose and throat. Practical lectures are given at the School. The class visits, in sections, the laryngological clinics at the Boston Dispensary, the Boston City Hospital, and the Carney Hospital.

NEUROLOGY

The Department of Neurology is under the direction of Dr. Morton Prince, and the courses embrace in their scope required and elective work.

The work of the third year is required and consists of:

(1) Clinical and didactic lectures given at the Boston City Hospital once a week during the first half year by Dr. Prince.

(2) Lectures on the anatomy, physiology, and pathology of the nervous system are given at the Medical School once a week during the second half year by Dr. Tower, supplemented with instruction by sections in the laboratory in the microscopical examination of the normal and pathological nervous system.

OPHTHALMOLOGY

The course in ophthalmology will be of the most practical character possible, being designed to give the general practitioner such knowledge of the subject as is most essential to his practice. The lectures will be given twice a week, the first half of the school year. For clinical work the class will be divided into small sections, preparatory to instruction at the Massachusetts Charitable Eye and Ear Infirmary. The fourth-year elective students will be given personal instruction by all members of the department throughout the school year. Instruction in operative work will be given in small sections by Professor Chandler.

OBSTETRICS

The instruction in obstetrics consists of lectures, recitations, conferences, and clinical teaching. Lectures are illustrated by plates and the use of the manikin. Each student is required to care for at least four cases (clinical instruction being given with one of these), attending them throughout convalescence, and

handing in a written report. Some of these reports will be read before the class, and subjected to discussion and criticism by class and instructor.

PULMONARY DISEASES AND CLIMATOLOGY

A chair of pulmonary diseases and climatology was established some years ago, and Dr. Edward O. Otis, Physician to the Free Home for Consumptives, and the tuberculosis department of the Boston Dispensary, formerly president of the American Climatological Association, was elected head of this department. Medical climatology will receive special attention in relation to the climatic treatment of tuberculosis. The methods of sanatorium treatment will be discussed, and one or more sanatoriums visited during the year. "The tuberculosis class," "the day camp," and other modern methods of treating tuberculosis are also given attention.

A limited number of students of the fourth year who desire to assist at the tuberculosis clinic of the Boston Dispensary will have opportunity to do so, and should apply to Dr. Otis. In this department special attention is devoted to pulmonary tuberculosis, concerning which instruction is given, both by didactic and clinical lectures, to the students of the third and fourth years. Special clinical instruction, with opportunities for the physical examinations of patients, will be given to the students of the third and fourth classes, in small sections, at the clinic for pulmonary diseases in connection with the Boston Dispensary, the out-patient department of the Boston Consumptive Hospital, and the Mt. Sinai Hospital. The detection, treatment, and prevention of pulmonary tuberculosis will be thoroughly studied in this class.

GENITO-URINARY DISEASES

The required course in Genito-Urinary Diseases will commence in the second half of the third year, when the didactic lectures in this subject will be given. Clinical instruction will be given during the first period of the fourth year.

GYNECOLOGY

Instruction in gynecology is given both by lectures and clinical teaching. Lectures are given to the third-year students twice a week during the second term. Once a week a quiz is held on the lectures.

CHILDREN'S DISEASES

The work of the third year consists of didactic lectures on chosen subjects and clinical lectures covering the common diseases of childhood two hours a week throughout the year. Clinical instruction is given in sections at the Out-Patient Department of the Boston Dispensary. Each section works for one month and is taught by required practical work with patients in diagnosis and treatment. All the clinical laboratory work helpful in diagnosis is done at the clinic in connection with the physical examination of patients. During the year the class will be taken to a model farm where all the practical points in the proper care of milk for infants will be demonstrated. Contagious diseases are presented to the class in sections at the South Department of the Boston City Hospital. When possible, at these visits to the contagion wards of the hospital, the technique of inturbation will be shown.

MEDICAL DIAGNOSIS

The instruction in Clinical Medicine during the third year is given under the head of Medical Diagnosis. The course continues throughout the third year. One clinical lecture each week is given at the Boston City Hospital, illustrating the subject. In addition the class, in sections, attends ward visits and medical clinics. An important part of this clinical work is given under the supervision of the Department of Pulmonary Diseases, and in district visits under the supervision of physicians of the Boston Dispensary. The work in this course is closely correlated with the course in Theory and Practice.

HYGIENE AND SANITATION

Hygiene and sanitation are taught during the third year.

The principal subjects of the course are air, water (public and private), and food supplies.

The transmissible diseases, and their epidemiology, industrial hygiene, and the inspection of work-shops and factories, house construction, heating, ventilating, and plumbing, care of family wastes, and the disposal of sewage.

Railroad sanitation, military and naval hygiene, quarantine, disinfection and fumigation. National and State laws relative to health officers, and the protection of the public health.

The inspection of schools.

Burial of the dead, and vital statistics.

HEMATOLOGY

The course in hematology consists of sixteen lectures and twelve two-hour laboratory exercises, — forty hours in all for each student during the second semester of the third year,—with occasional clinical lectures at the Boston City Hospital. It is given as a sub-department of Clinical Medicine, and it is the aim to adapt it to the needs of the future practitioner. The lectures deal with diseases of the blood from a clinical as well as from a laboratory standpoint. The first laboratory exercises consist of preliminary instruction in the technique of blood examination, followed by practical work in blood pathology. A permanent collection of some three thousand microscope slides and a number of excellent wall-charts are also available.

Fourth Year Subjects

CLINICAL MEDICINE

The aim of the work in Clinical Medicine is to give the student a practical acquaintance with disease. The instruction in this department begins with Medical Anatomy (part of the course in Applied Anatomy), in the second semester of the first year. Then follow the course in Physical Diagnosis in the second year and the course in Medical Diagnosis in the third year.

The fourth-year course in Clinical Medicine is a continuation and farther development of this work.

The instruction consists of two clinical lectures at the Boston City Hospital, one clinical lecture (Pulmonary Diseases) at the Boston Dispensary, and two hours at the School. One of these latter hours is given to conferences on cases which the students have studied, and the other is given partly to instruction in practical therapeutics and dietetics, and partly to exercises in conjunction with the Department of Pathology on clinical pathology, — the clinical and pathological study of actual cases.

In addition, abundant opportunities for clinical study are offered, in ward visits and other medical clinics. This instruction is given chiefly at the Boston City Hospital, the Boston Dispensary, and the Free Home for Consumptives. The work in Pulmonary Diseases in the fourth year is regarded as part of the course in Clinical Medicine.

The marks throughout the various courses of the Department of Clinical Medicine are based on practical work and the report of cases, as well as on written examinations.

CLINICAL SURGERY

The work in clinical surgery for the fourth year consists of lectures, conferences, attendance at clinics and operations. The class in small sections attends clinics at the Boston Dispensary, where the student studies surgical cases most frequently met with in the daily work of the general practitioner; and at the Grace Hospital, where both out-patient and ward cases furnish a wide range of general and major operative surgery. At these clinics students have opportunity to examine and study various cases and to become practically familiar with diagnosis and treatment. Students in this class also have opportunities of administering ether and assisting at operations. Positions as surgical out-patient dressers are open to students, at the City Hospital, Boston Dispensary, and elsewhere, and this opportunity for practical work is taken advantage of by many students.

OPERATIVE SURGERY AND SURGICAL ANATOMY

The work in operative surgery has been enlarged by the addition of a course in surgical anatomy, given by the department of anatomy in conjunction with the department of clinical surgery. This course, which includes three exercises a week for five weeks, consists of demonstrations of surgical landmarks upon the living model, the skeleton, and the cadaver, and a review of anatomy in general. Especial emphasis is laid upon that part of anatomy which is important in operative surgery.

Regional anatomy is demonstrated, and at the conclusion of the review given by the department of anatomy the important surgical operations of the region under discussion are demonstrated by members of the surgical staff. Thus surgery of the neck is first treated from the standpoint of surgical landmarks, pointed out upon the living model, the skeleton, and the cadaver. The surgical anatomy of the neck is then demonstrated on the cadaver, and at the conclusion of these exercises by the Department of Anatomy, the important surgical operations of the neck are demonstrated by members of the Department of Surgery.

The same course is pursued with all parts of the body, and at the conclusion of the anatomical teaching concerning any region, the special operations of that region are demonstrated by members of the surgical staff.

At the conclusion of the course the class is divided into small sections, and each section performs the various operations upon the cadaver in the dissecting room. Each section is supervised by an instructor.

The course in operative surgery and surgical anatomy as above outlined is a part of the required work in clinical surgery.

NEUROLOGY

The Neurology for the fourth-year class is both required and elective. The required courses consist of clinical and didactic lectures by Dr. Prince and Dr. Thomas; clinical exercises by Dr. Fairbanks, in sections, at which instruction is given in methods of examination of the patient, and diagnosis of the dis-

eases of the nervous system; and clinical conferences, at which the student makes a written report of a case which he has himself studied and diagnosed. The report is then discussed by the class and the instructors.

The elective course consists of clinical exercises by Dr. Thomas. In these clinical exercises the student has an opportunity to examine and study the patient for himself, thus becoming experienced in the methods of examination, and acquainted with nervous diseases as present in the subject.

The lectures and exercises are given at the Boston City Hospital during the first half of the school year.

PSYCHO-PATHOLOGY AND PSYCHO-THERAPEUTICS

The course in Psycho-pathology and Psycho-therapeutics is given to the fourth-year class under the direction of the department of Neurology.

Among the subjects included are: the mechanism of memory; integrative action of the nervous system; emotion; hypnotism; suggestion; the sub-conscious, co-conscious and unconscious; hysteria; neurasthenia; obsessions; dissociations of personality; and the principles of psycho-therapeutics. These are only a few of the subjects treated.

MENTAL DISEASES

Instruction in mental diseases will be afforded by a course comprising didactic and clinical lectures, to be given weekly from January to the middle of May. Ten or more clinics will be held at the Boston State Hospital, where a large number of patients are received annually. Two clinics will be given also at the Massachusetts School for Feeble-Minded, at Waverley. It will be the aim of this course to allow the students to become familiar with the prevalent forms of mental trouble, the early symptoms of insanity, and with the methods of commitment. Especial attention will be given to mental defects in children.

CHILDREN'S DISEASES

The fourth year work in Children's Diseases consists of one exercise a week throughout the year in case teaching, infant

feeding and the feeding of delicate children. Three exercises a week of two hours each are given students in sections at the Children's Hospital of the Boston Dispensary. The work includes special instruction in the food laboratory, the study of clinical cases from the ward and ward visits.

PATHOLOGICAL TECHNIQUE

The course in pathological technique is offered to students of the fourth year. It is intended to develop in the student a special familiarity with the diagnostic tests which are used in pathological and bacteriological work. The course will include studies of pathological products from the standpoint of rapid diagnosis, as the preparation of free-hand and frozen sections, together with the rapid celloidin imbedding of fresh tissue; training in methods of description and the preparation of protocols; special bacteriological tests, notably the opsonin test and the preparation of vaccines; the study of agglutination by Wright's method; inoscopy, cytodiagnosis, etc.

This course is expected to be of particular value to students who intend to obtain house-officerships in small hospitals where regular pathological appointments are not made.

ABDOMINAL SURGERY

Instruction is given in abdominal surgery, including appendicitis, hernia, and the major operations on the female pelvic organs, by two lectures and one quiz weekly to fourth-year students during the first term, and by demonstrations on the cadaver, clinical conferences, and attendance of subdivisions of the class at operations.

MEDICAL JURISPRUDENCE

In most institutions instructions in legal medicine is limited to those subjects which prepare the graduate for the work of the medical examiner or coroner, in spite of the fact that only a small number of practitioners ever have opportunity to exercise these functions.

The course which will be offered to the fourth-year class is intended to be broader in scope and it will include:

Instruction of the rights and duties of the physician in court, by Justice William Schofield, of the Superior Bench of Massachusetts.

A study of the legal relations of the physician to the public, to the profession, and to his patients, by Dr. F. J. Keleher member of the Boston Bar.

Instruction in the duties of the medical examiner, illustrated, by practical demonstration of medico-legal cases by Dr. Leary.

ORTHOPEDIC SURGERY

The work in orthopedic surgery consists of one lecture, four clinics, and one quiz each week of the first half-year, and of two exercises a week at the Carney Hospital during the second half-year, for those electing the subject. The work of the second half-year consists of practical exercises in diagnosis and treatment in the out-patient department, and of ward visits, with opportunity to see the operative work, especially the orthopedic surgery of the adult.

OTOLOGY

Instruction in otology consists of lectures on the anatomy, physiology, and pathology of the ear, at the Massachusetts Charitable Eye and Ear Infirmary. These lectures are illustrated by Politzer's charts of the human ear, models, anatomical specimens of the temporal bone, bone-corrosion preparations, and microscopical sections of the organ of hearing.

Clinical and practical instruction in otology is given to small sections of the class at the close of each lecture. The students witness the examination and treatment of patients, are invited in class sections to be present at the major operations upon the ear, and to accompany the aural surgeon in his daily rounds through the wards.

An elective course for the fourth-year students consists of clinical work at the Massachusetts Charitable Eye and Ear Infirmary and the Carney Hospital.

DISEASES OF THE RECTUM

The course in diseases of the rectum will consist of weekly lectures during the first half-year at the School, and clinical in-

struction every morning at the rectal department of the Boston Dispensary. Each student will have ample opportunity to examine patients, and in suitable cases to apply treatment. Especial attention will be paid to so-called "office treatment" of this class of diseases.

DERMATOLOGY

The instruction in dermatology will consist of weekly lectures to the fourth-year students from January to April. Also, from January to June, there will be three weekly clinics at the Boston Dispensary, where cases of skin diseases will be shown to the class, with an opportunity for each student to examine the cases personally.

GENITO-URINARY DISEASES

Clinical instruction in genito-urinary diseases is given at the genito-urinary department of the Boston Dispensary. All the students of the fourth year are required to attend the clinic in sections permitting individual instruction, during the first semester, and are taught the chief points of modern genito-urinary technique. Students electing this course receive additional instruction in sections during the second semester. As the number of patients attending this clinic is very large, each student has an opportunity to see many cases of genito-urinary diseases and to become familiar with their diagnosis and treatment.

ELECTRO-THERAPEUTICS

The course in electro-therapeutics given to the fourth-year students will consist of twelve lectures, with occasional quizzes. It will include a brief review of the principles of electro-physics, the nature, methods of production, and physiological action of the various forms of electrical energy, together with a brief discussion of therapeutic uses and limitations.

CLINICAL GYNAECOLOGY

The first essential being the ability to make an exact diagnosis, the students of the fourth-year class, in sections of two students only, are given abundant opportunity to make physical

examinations under proper supervision. The daily clinics (morning and afternoon) of The Dispensary for Women, of the Boston Dispensary, the Tremont Dispensary, Carney Hospital, St. Elizabeth's Hospital, and Mount Sinai Hospital provide a course in methods of diagnosis and treatment superior to any other in New England. Adequate provision is also made for students to witness operations in plastic and major pelvic surgery.

CLINICAL TUBERCULOSIS

A special elective course in clinical tuberculosis is given to the fourth-year class by Professor Otis during the months of January, February, and March. It will pay special attention to the early stages of the disease, and will deal generally with the diagnosis, prognosis, treatment, and prophylaxis of pulmonary tuberculosis. There will be at least twenty-five clinical exercises, and a required essay, or examination.

Preparation

Prospective students who have completed the preparation required for admission to the Medical School are advised, if they feel able to give the necessary time, to take a year of college work before entering upon distinctively medical studies, in order to obtain a more thorough foundation and to become familiar with the laboratory methods which form the basis of the work of the first two years of the medical course.

The School of Liberal Arts of Tufts College offers to such students a special course indicated below. This course is open only to students who have fully met the requirements for admission to the Medical School, being supplementary to the regular preparation, and not in any sense a substitute for it.

1. Biology 3. Two lectures and four hours of laboratory work each week upon the structure and development of selected vertebrate types. The forms studied in the laboratory are the dogfish, salamander, and cat, with some microscopic work on embryos and tissues, and the study of skeletons of several animals.

2. Chemistry 1. Two lectures and six hours of laboratory work each week. The lectures cover general theoretical and descriptive inorganic chemistry. The laboratory work is devoted to the principal elements and their compounds.

3. English 1 and 2. Three hours a week of instruction in composition and rhetoric.

4. German or French.

5. Elective.

TEXT-BOOKS

[For the session 1911-12]

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy. — Piersol, Gray, Morris, Cunningham, Eisendrath, Sabotta, McMurrich, Spatheholz, Cunningham's Manual of Dissection.

Histology.—Syllabus, Böhm and Davidoff, Stohr, Ferguson, Bailey, Schäfer's Essentials.

Physiology.—Syllabus, Dearborn's Text-Book of Physiology, Howell, Landois, Verworn, Schäfer, Morat, Hutchinson, McFarland's Biology.

Bacteriology.—Syllabus, Park and Williams, Hiss and Zinsser, Jordan, Muir and Richie, McFarland, Abbott, Lehmann and Neumann, Sternberg.

Chemical Pathology.— Hammarstein's Physiological Chemistry, Well's Chemical Pathology, Ogden's Clinical Examination of the Urine, Purdy's Practical Urinalysis and Urinary Diagnosis, Simon's Physiological Chemistry, Wood's Chemical and Microscopical Diagnosis, Holland's Medical Chemistry and Toxicology.

Materia Medica and Therapeutics.—Hare, Sollman, Cushing-Thornton's Dose Book and Manual of Prescription Writing.

Pathology.—Syllabus, Stengel, Ziegler, Coplin, Mallory and Wright's Technique, Durck's Pathological Histology, Cohnheim. Green, American Text Book

Physical Diagnosis.— DaCosta's Physical Diagnosis, Ander's Physical Diagnosis.

Toxicology.—Taylor's Medical Jurisprudence, Peterson and Haine's Legal Medicine and Toxicology, Brundage's Toxicology.

Children's Diseases—Holt's Diseases of Infancy and Childhood, Kerley's Treatment of Children's Diseases, Sach's The Nervous Diseases of Children, Morse's Case Histories in Pediatrics.

Gynaecology.—Dudley, Kelly, Reed.

Hematology.—Cabot's Clinical Examination of the Blood.

Hygiene.—Bergey, Principles of Hygiene; Egbert's Hygiene and Sanitation.

Laryngology.—Coakley, Knight, Kyle, Shurley, Ballenger.

Medical Diagnosis.—Musser's Medical Diagnosis.

Obstetrics.—Edgar, Hirst, Grandin, Jarman and Marx.

Ophthalmology.—Fuch, Swanzey, May.

Practice of Medicine.—Osler, Tyson, Forscheimer's Prophylaxis and Treatment, Anders's Practice of Medicine, Thompson, Strümpell, Eichhorn.

Pulmonary Diseases.—Babcock's Diseases of the Lungs, Otis' The Great White Plague, Otis' Treatment of Tuberculosis in Musser and Kelley's Treatment, Kleb's Tuberculosis, Bonney's Tuberculosis and Its Complications.

Surgery.—Brewer, International Text-book, American Text-book, Stimson on Fractures and Dislocations.

Abdominal Surgery.—McGrath, Gould, Grieg-Smith.

Clinical Gynaecology.—Dudley, Garrigues.

Clinical Medicine.—Osler's Practice of Medicine, Wood and Fitz's Practice, Ander's Practice of Medicine, Forscheimer's Prophylaxis and Treatment.

Clinical and Operative Surgery. — Brewer, International Text-book, American Text-book, Wharton and Curtis, Roberts, Stimson on Fractures and Dislocations, Scudder on Treatment of Fractures, Binney's Operative Surgery, Treves's Surgical Anatomy, Crandon's Surgical After-Treatment.

Dermatology.—Hyde and Montgomery's Diseases of the Skin, Duhring, Stelwagon, Crocker, Kaposi, Besmer.

Gastro-Intestinal Diseases.—Riegel, Boas, Kemp (of the Stomach); Boas, Ernhorn (of the Intestines).

Diseases of the Rectum.—Kelsey, last edition; Tuttle, Gant, second edition.

Genito-Urinary Diseases.—Keyes, Morton, Taylor, Greene-Brooks.

Mental Diseases.—Brower and Bannister's Practical Manual of Insanity, Diefendorf's Clinical Psychiatry, Berkely's Mental Diseases, Wood's Reference Handbook, article on Insanity, Clouston's Clinical Lectures on Mental Diseases, Tuke's Dictionary of Psychological Medicine, E. Regis's Practical Manual of Mental Medicine, Wm. A. White's Outlines of Psychiatry.

Neurology.—Oppenheim, Church and Peterson.

Orthopedics.—Whitman's Orthopedic Surgery (fourth edition), Bradford and Lovett, Goldthwait, Painter and Osgood.

Otology.—Bacon's Manual of Otology.

Medical Dictionary.—Gould, Dunglison, Dorland.

Requirements

FOR ADMISSION TO THE FIRST-YEAR CLASS

Candidates for the Medical School are admitted in two ways:

1. By credentials.
2. By examination.

1. Admission by Credentials

Graduates of high schools, academies, colleges or universities accredited * by the Association of American Medical Colleges, are admitted without examination. These candidates must also present a certificate of proficiency in Chemistry, in Latin, and in Physics.

2. Admission by Examination

Candidates for admission by examination must have received adequate preparation in certain subjects falling in two groups, known respectively as the Required and the Elective Group.

Fourteen units are required for admission. A unit represents a year's study in any subject in the preparatory school, representing approximately a quarter of a full year's work.

Where the same subject appears listed as elementary, intermediate and advanced, it is to be noted that the units of the higher grades may be added to those of the lower grade. For example, the subject of Advanced Latin presupposes four years' study of the language, and carries credit for four units, two for elementary, one for intermediate and one for advanced Latin.

The Required Group

Elementary English, 3;
Elementary Latin, 2;
Elementary Physics, 1;
Elementary Algebra, 1½;
Plane Geometry, 1.

* The term "accredited" as applied to high schools, academies, colleges and universities means institutions of that type that have been investigated and are accredited by the State University of their respective states, or by the North Central Association of Colleges and Secondary Schools, the Association of Colleges and Preparatory Schools of the Southern States, the Association of Colleges and Preparatory Schools of the Middle States and Maryland, the New England College Entrance Certificate Board, the Association of American Universities, and the Association of State Universities.

Candidates are required to present all the subjects of the Required Group, and a selection of subjects from the Elective Group, aggregating 5½ units, according to the value indicated below.

The Elective Group

ELEMENTARY

Greek, 2
French, 2
German, 2
History, 1
Chemistry, 1
Botany, 1
Zoology, 1
Geology and Geography, 1
Mechanical Drawing, 1
Freehand Drawing, 1
Shop Work, ½ to 2
Economics, ½
Anatomy, Physiology, and Hygiene, ½

INTERMEDIATE

Latin, 1
French, 1
German, 1

ADVANCED

Greek, 1
Latin, 1
French, 1
German, 1
History
Algebra, ½
Trigonometry, ½
Solid Geometry, ½

Detailed information concerning the amount and character of the work required in preparation will be found on pages 44 to 66.

Entrance Examinations

Candidates may take the examinations of the College Entrance Examination Board, June 17th to 22nd, 1912, at Tufts College or elsewhere. Full information concerning application for such examination may be had by addressing the secretary of the Board, Post Office Sub-Station 84, New York.

Examinations will be given in September at Tufts College, according to the schedule published in the calendar at the beginning of this catalogue. An examination fee of $5.00 is payable at the time of examination, but candidates who subsequently enter the Medical School will not be required to pay the matriculation fee of the first year.

Advanced Standing

Allowance is made for time spent in the study of medicine in other accredited medical schools, but no credit is given for examinations passed in other schools, except by special vote of the Committee on Instruction.

PROMOTION

To Second-Year Class

Students who have passed a majority of the first-year examinations, and who have removed all entrance conditions, are admitted to the second-year class.

To Third-Year Class

Students of the second-year class who have passed all the first-year examinations, and a majority of the second-year examinations, are admitted to the third-year class.

To Fourth-Year Class

Students who have passed all the studies of the first and the second year, and a majority of the studies of the third year, are admitted to the fourth-year class. No other students are admitted to this class, except by special vote of the Faculty.

GRADUATION

For the Degree of M.D.

Candidates for the degree of Doctor of Medicine must have fulfilled the following requirements: —

1. They must furnish certificates that they are twenty-one years of age.
2. The Faculty must be satisfied of their good moral character.
3. They must have attended four full courses of medical study at some accredited medical college, the last of which shall have been at this School as members of the fourth-year class, and no two courses in the same twelve months.
4. They must have passed all the required examinations, and have performed the required amount of laboratory and clinical work.
5. They must have satisfactorily dissected one-half of the body, under the direction of a demonstrator of anatomy.
6. They must have paid all fees.

CHANGE OF REQUIREMENTS

The Faculty reserve the right to change all requirements without further notice.

HONORS

Students who have attended four full courses of lectures at this School, and have obtained an average of ninety per cent. in their examinations, shall be eligible to "*summa cum laude*."

Students who have obtained an average of eighty per cent. shall be eligible to "*cum laude*," in connection with the degree received.

STANDING AND CERTIFICATES

At the end of each session a certificate of his standing for the year is sent by mail to each student. No marks will be sent or credit given to any student who is in arrears with the Bursar.

FEES AND EXPENSES

A matriculation fee of *five dollars* is payable each year.

A charge of *one hundred and fifty dollars* for tuition is payable in advance. If not paid before November 1, there will be an additional charge of *five dollars*.

If desired, the tuition may be paid in instalments, in which case an additional charge of five dollars is made, and the fees are then paid as follows: —

First payment: — Five dollars for matriculation fee and seventy-five dollars on account of the tuition, a total of *eighty dollars*, payable at the beginning of the first semester.

Second payment: — Seventy-five dollars, the balance of the tuition, and five dollars, the additional charge, a total of *eighty dollars*, payable at the beginning of the second semester, or before February 1.

There is no charge for laboratory supplies. Anatomical material will be supplied at cost.

No student will be admitted to the exercises of the first half-year who has not paid his matriculation fee and at least one half the tuition, and no student will be admitted to the exercises of the second half-year who has not paid his fees in full.

Students leaving the school have no claim for tuition paid.

Students who have failed twice in a subject are required to pay a fee of five dollars for each subsequent examination in that subject.

POST-GRADUATE FEES

Post-graduate fee for graduates of other schools	$150.00
Single course	50.00
Post-graduate fee for graduates of this school	60.00
Single course	30.00
Anatomical material	at cost

The Bursar of the College will be at the School, Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from October 1 to June 1.

There are no scholarships connected with the School.

The expenses of living in Boston need not exceed those in small cities and villages. Good board, including room, heat, and light, can be obtained in the vicinity of the school at from $5.50 to $7 a week. Students will not be allowed to occupy rooms disapproved by the Faculty.

LIBRARIES

The students of this school have free access to the Dental School Library, to the Library of Tufts College, to the Boston Public Library, and to the Boston Medical Library.

The library at the Dental School is open daily from 9.00 a. m. to 5 p. m., except Sundays and holidays. This library is intended to provide *text books for reference*, and the latest editions of all text books used in the school are furnished. These cannot be taken from the Reading Room. In addition, the library contains a large number of reference books in general medicine and general surgery, and in all special branches of each. These works are loaned to the student free of charge, and can be taken out. Complete files of various medical journals provide a valuable addition to the school library.

The Boston Medical Library, which is situated near the School, has one of the largest and most complete collections of medical works in existence. It contains not only bound volumes of every important book in medical literature, but also a very extensive collection of monographs and pamphlets on special subjects. All the leading medical journals are on file for inspection. The Boston Medical Library extends its privi-

leges, under certain conditions, free of charge to students of this School. Its rooms are open daily from Oct. 1 to May 31, from 9.30 a. m. to 10.00 p. m., except Sundays and holidays. The hours on Saturday are from 9.30 a. m. to 6 p. m.

APPLICATIONS

Students who intend to enter the School for the first time must obtain from the Secretary an application blank, which they are required to fill out and return to him. Application blanks will be mailed upon request.

REGISTRATION

Registration is required of all students, each year. *Registration blanks for the session 1912-13 must be filled out and deposited with the Secretary on or before October 5, 1912.* Registration is conducted at the school building only.

Summer Courses

The following subjects are offered during the summer months: —

PHYSIOLOGY

A course in Physiology will be given during the months of June and July by, or under the direction of, the Professor of Physiology. For particulars of the course application should be made to Dr. Dearborn.

HISTOLOGY

A summer course will be given under the direction of the Professor of Histology. Particulars as to the scope of this work, and the fee, may be learned upon application to Dr. Bates.

CHEMICAL BIOLOGY

A summer class in chemical biology is conducted by Dr. Thorpe. This is a laboratory course, and is given in the laboratory of the department of Chemical Biology. For further particulars, apply to Dr. Thorpe.

THE DENTAL SCHOOL

Faculty of the Dental School *

FREDERICK WILLIAM HAMILTON, A.M., D.D., LL.D.
PRESIDENT — Tufts College

HAROLD WILLIAMS, A.B., M.D., LL.D. . . . . 528 Beacon St.
DEAN, *and Professor of the Theory and Practice of Medicine*

FREDERIC MELANCTHON BRIGGS, A.B., M.D. . . 31 Mass. Ave.
SECRETARY, *and Professor of Clinical Surgery*

CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree
Professor of Chemistry

FRANK GEORGE WHEATLEY, A.M., M.D. . . . . North Abington
Professor of Materia Medica and Therapeutics

BYRON HOWARD STROUT, D.D.S . . . . . Taunton
Professor of Operative Technics and Instructor in Anesthesia

WILLIAM ELISHA CHENERY, A.B., M.D. . . 222 Huntington Ave.
Professor of Diseases of the Nose and Throat and Instructor in Oral Syphilis

GEORGE ANDREW BATES, M.Sc., D.M.D. . . . . Auburndale
Professor of Histology

WILLIAM PRESTON HOUSTON, D.M.D. . . . . 419 Boylston St.
Assistant Professor of Clinical Dentistry

EUGENE THAYER, A.M., M.D. . . . 2683 Washington St., Roxbury
Demonstrator of Anatomy

GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D. 6 Mason St.,
Professor of Physiology — Cambridge

FRANK ALEXANDER DELABARRE, A.B., D.D.S., M.D.,
Professor of Orthodontia — 164 Newbury St.

JOHN WOOD FORBES, D.M.D. . . . . 419 Boylston St.
Assistant Professor of Operative Dentistry

TIMOTHY LEARY, A.M., M.D. . . . 44 Burroughs St., Jamaica Plain
Professor of Pathology and Medical Jurisprudence

ERVIN ARTHUR JOHNSON, D.M.D. . . . . 2 Commonwealth Ave.
Assistant Professor of Clinical Dentistry

* When only street and number are given in the address, the street is in Boston. With the exception of the President, the Dean, and the Secretary, the names are arranged in the order of academic seniority.

HARRY HOMER GERMAIN, M.D. . . . . 416 Marlborough St.
Assistant Professor of Anatomy

JAMES KELTIE, D.D.S. . . . . 419 Boylston St.
Assistant Professor of Crown and Bridge Work

OLGA CUSHING-LEARY, M.D. . . 17 Grovenor Road, Jamaica Plain
Assistant Professor of Pathology and Bacteriology

CLARENCE ALBERT PETTENGILL, D.M.D . . . 120 Boylston St.
Professor of Prosthetic Dentistry

OTHER INSTRUCTORS

HENRY HILDRETH PIPER, A.B., D.M.D. . . . . Gilman Sq.,
Instructor in Clinical Dentistry Winter Hill

WILLIAM RICE, D.M.D. . . . . 16 Arlington St.
Instructor in Clinical Dentistry

IVAN ALEXIS TEOFIL CENTERVALL, B.S., D.M.D. . 2 Park Sq.
Instructor in Clinical Dentistry

HARRY GRAY CHASE, B.S. . . . . Tufts College
Professor of Physics

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Assistant in Bacteriology 1650 Dorchester Ave., Dorchester

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Instructor in Clinical Dentistry S. Boston

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Instructor in Clinical Dentistry

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Instructor in Clinical Dentistry

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Assistant Demonstrator of Anatomy

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FRANK EUGENE HASKINS, PH.G., M.D. . . 134 Huntington Ave.
Instructor in Pharmacology and Assistant Demonstrator of Anatomy

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Instructor in Clinical Dentistry

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Instructor in Prosthetic Dentistry

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Assistant in Prosthetic Dentistry

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Assistant in Histology

WILLIAM HENRY EATON, D.M.D. . . . . 419 Boylston St.
Instructor in Clinical Dentistry

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Assistant Demonstrator of Anatomy

ARTHUR HERBERT McINTOSH, D.M.D. . . . . 8 Cumberland St.
Instructor in Clinical Dentistry

JOSEPH ALOYSIUS MEHAN, M.D. . . . . 4 Park St., Lowell
Instructor in General Chemistry

EVERETT MITCHELL BROWN, D.M.D. . . . 204 Huntington Ave.
Instructor in Operative Technics

HAROLD GIFFORD METTERS, D.M.D. . . . 681 Washington St., Norwood
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Assistant in Physiology

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Demonstrator of Extracting and Anaesthesia

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CHARLES EDWARD WHITNEY, D.M.D. . . . . Milford
Instructor in Clinical Dentistry

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Instructor in Clinical Dentistry

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Assistant in Orthodontia

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Assistant in Orthodontia

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Assistant in Clinical Dentistry

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Assistant in Clinical Dentistry

OTHER OFFICERS

EDMUND WILBUR KELLOGG . . . . . 24 Milk St., Boston
Assistant Treasurer

EUGENE EVERETT SHEPARD . . . 43 Boston Ave., W. Medford
Bursar

LINA A. MAYO . . . . . Milton
Stenographer

LILLIAN M. TATTAN . . . . . Somerville
Clerk to Secretary

MARY WRIGHT RICHARDSON . . . . . 19 Brighton Ave., Allston
Clerk of the Department of Clinical Dentistry

SARAH ELIZABETH MILLER . . . . . 7 Haviland St.
Clerk of the Department of Prosthodontia

FRANCES WILDER . . . . . 75 Rutland St.
Matron of the Department of Anesthesia and Extraction

STANDING COMMITTEES OF THE DENTAL SCHOOL

The Dean and the Secretary are members of all Committees, *ex officiis*

ADMINISTRATION.—The President, Drs. Bates and Johnson

ADMISSION.—Drs. Leary, Bates, Dearborn and Professor Hayden

LIBRARY.—Drs. Bates and Houston

INSTRUCTION.—Drs. Johnson, Pettengill and Bates

CATALOGUE.—Drs. Bates and Dearborn

WOMEN'S ADVISORY COMMITTEE.—Drs. Elizabeth A. Riley, Olga Cushing-Leary and Edna Weil-Dreyfus

Student Government Board

The members for the current year of the Student Government Board of the Medical and Dental Schools are as follows: —

CHAIRMAN

Philip E. A. Sheridan, M '12

SECRETARY

Richard J. Fitzgerald, D '12

MEDICAL SCHOOL:

William T. Haley, '12
John J. Deacy, '13
Henry L. Davis, '14
William V. Kane, '15

DENTAL SCHOOL:

Chester E. Cleaves, '12
Joseph F. Sullivan, '13
Ralph H. Miller, '14

Tufts College Dental School

416 Huntington Avenue

Boston, Mass.

The Dental School, formerly the Boston Dental College, became an incorporate part of Tufts College in 1899, under a special act of the legislature. It was incorporated under its former name in 1868, and is a firmly-established dental school of forty years' standing, with a large and distinguished body of alumni. Its transfer to Tufts College was in consequence of the new anatomical laws of the State, and because it was felt by its former board of trustees that the advance in dental education rendered it desirable that the purely scientific part of its curriculum should be pursued in connection with a medical school.

The course of instruction in this institution embraces three academic years of eight months each. The studies of the first year, and a portion of those of the second year, are given in connection with those of the Medical School. Instruction is by means of lectures, demonstrations, laboratory work, and recitations, in anatomy, physiology, histology, chemistry, materia medica, pathology, therapeutics, bacteriology, principles of surgery, hygiene, theory and practice of dentistry, oral surgery, and in operative, clinical, and prosthetic dentistry, orthodontia, and dental technics.

The infirmary, under the personal direction of the Professor of Clinical Dentistry, assisted by a corps of demonstrators, is open daily through the year, except during a part of June, the whole of July and August, and a part of September. In the abundance and variety of its clinical material it furnishes an unsurpassed opportunity for the study of oral surgery and of dentistry in all its branches.

The laboratory of the prosthetic department is provided with perfect facilities for every variety of dental work. Every student is required before graduation to present satisfactory specimens of the different forms of mechanical work made by himself in the laboratory of the School, and under the supervision of the Professor of Prosthetic Dentistry.

Further opportunities for instruction are furnished by the valuable clinics and operations at the large hospitals of the city, which can be visited by the matriculates of this institution. Numerous operations upon the face and oral cavity are performed before students on public operating-days, and all connected with the School are urged to avail themselves of the facilities thus offered.

THE BUILDING

The building is occupied by the combined Medical and Dental Schools of Tufts College, and was built in 1900, as it was found necessary to provide increased laboratory facilities owing to the rapid growth of the schools. Special attention is called to the dental infirmary which occupies the first floor of the dental wing. This room, 125 by 29 feet, is equipped and arranged in a manner similar to the operating room of a hospital; aseptic chairs, cuspidors and brackets have been especially constructed for this school. Steam sterilizers have been provided for the disinfection of instruments, and it is believed that by these moden applications of asepsis to dentistry, the infirmary is among the most complete dental infirmaries in this country. The prosthetic department, which corresponds in size to the infirmary, is equipped in the most approved modern fashion. For this department electric power is supplied. The lower floor of the dental wing is devoted to operative technics and to the department of anaesthesia and extraction. In the latter department, the most improved apparatus for the administration of nitrous oxide gas is provided, and there is a recovery room under the charge of a professional nurse, who is in daily attendance. A surgeon connected with the Medical School is present on occasions when ether is administered.

Owing to the rapid growth of the school, it has been found necessary to provide more and larger quarters for lectures and laboratory work. A fourth story has been added, and the building has been largely remodeled. Three new lecture rooms have been added, giving a total of six lecture rooms, the largest seating 400 and the smallest 100. Each room has an excellent seating arrangement, and there is a sufficient equipment of opaque projectors and lantern slide apparatus. A new laboratory for the department of chemistry has been constructed on the fourth floor, the laboratory of the department of pathology and bacteriology has been renovated and enlarged, and the laboratory of the departments of histology and physiology has been completely remodeled. The building now has every possible facility for the most recent and advanced laboratory instruction.

Subjects of Instruction

ANATOMY

The course in anatomy is given throughout the first half of the first year. It consists of five lectures and two recitations weekly with the class, and of special demonstrations on the cadaver. In addition, during the first four weeks of the course six hours a week are devoted to section work in Osteology. Each student is required to dissect two parts, to the satisfaction of the Demonstrator of Anatomy, before taking the final examination. Record of attendance and of the quality of the work done in the dissecting room will be kept, and will largely determine the standing of the student in the class.

In the second half of the third year a course in special anatomy of the head is given.

CHEMISTRY

The course in general chemistry consists of descriptive chemistry and qualitative analysis, with so much of theoretical chemistry as is necessary for a proper understanding of the subject.

The classification of the carbon compounds is also taken up at considerable length, and special reference is made to those which are of interest in the study of medicine. The instruction is by lectures, recitations, and practical work by the students in the laboratory. There are five lectures, two recitations, and six or more hours of laboratory work for each student, every week during the first semester. Much attention is given to qualitative analysis for the sake of the valuable training which it imparts, and the knowledge of chemistry which is incidentally gained. The importance of this knowledge is evidenced by the fact that it is the only non-professional subject that is required in most dental schools. The aim is to impart such information in chemistry as is necessary to the intelligent dentist. At the same time any who wish to pursue the study further than is required of every graduate may do so by special arrangement.

During the second year this preliminary training in chemistry is followed by lectures, recitations, and laboratory work in dental chemistry. The metals, with their alloys and salts as used in dentistry, the bones and the teeth, the saliva, and the chemistry of the mouth are carefully studied. The high importance of the many applications of chemistry to the dental profession is fully recognized.

PHYSIOLOGY

The course in physiology is given throughout the latter half of the first year. It consists of five recitations, two lectures, and three conferences for every student each week, the preparation of a technical written paper, and extra demonstrations.

In the recitations, familiarity with the substance of an assigned text-book and with the Syllabus is required. The lectures set forth the principles of general physiology, and suggest some of its relations to the allied sciences, especially anatomy. The conferences give volunteers opportunity to become familiar with the literature on interesting physiological topics, which are then presented briefly in written reports and freely discussed by the class. Record both of the attendance and of the quality of the work done in the recitation-room will be kept, and, with the conference, will help to determine the standing of the student in the department. In addition, a three-hour written examination covering the entire scope of the year is held at the completion of the work, besides important subsidiary written examinations monthly.

By thus concentrating attention upon physiology during an adequate period, it is hoped that a thorough and indispensable grounding in the functions of the normal human organism will be acquired. Advanced work in physiology will be provided for competent students, by special arrangement with the head of the department, the constant aim being to adapt the labors of each student both to his needs and to his capabilities.

HISTOLOGY

The subject of histology covers the second half of the first year. The work during the first half of the allotted time will

be identical with that of the students in the Medical School. This part of the subject covers the study of the elementary tissues, treated comprehensively, beginning with their origin in the embryo. Dental histology will be taught during the second year. In this connection particular attention will be given to the study of the minute anatomy of the tooth. The development of the teeth will also receive careful treatment. A training which gives the student a knowledge of the origin and history of the dental germ lays a suitable foundation for the dentist.

The department is equipped with microscopes which, on the payment of a small fee, will be at the service of such as cannot furnish instruments of their own.

OPERATIVE DENTISTRY

In operative dentistry the instruction is both didactic and clinical. Lectures are given covering the whole field, familiarizing the student with all known methods, the conditions under which different filling materials are used, and the most approved manipulation of the same. Many lectures are followed by clinics before divisions of the classes, where attendance is obligatory. By this means every detail of the operation is impressed upon the mind of the student. Great emphasis is placed upon the preparation of cavities for filling. Instruction is further given concerning the pathological conditions of the mouth and the treatment of the same, exposed pulps, inflamed pulps, dead pulps, abscesses, inflammation of the peridental membrane, and allied subjects. Special attention is given to the preparation of cavities for porcelain filling, and the manipulation of the same. Prophylaxis also is taught, under improved systematized methods.

OPERATIVE TECHNICS*

The technical laboratory is situated on the lower floor, and is exceptionally well lighted from three sides. It is equipped with benches having lock drawers for each student, and has power lathe and other implements for convenient use.

* NOTE.—The operations in the technical departments require a very large number of natural teeth, and a sufficient supply is sometimes difficult to get. It will therefore be to the interest of students if they will bring with them all the extracted teeth they can obtain.

Instruction in this course will be by lectures, illustrated by models and drawings, and by practical work on the part of the student. The student's work will include the study of the forms of teeth, with carving in ivory; study of the position and form of pulp chambers and canals, with dissection of teeth; proper methods of treating and filling pulp canals, with operations on extracted teeth, Porcelain inlay work, with practical examples, also proper methods of forming cavities for filling, and the manipulation of all filling materials, will be included.

CLINICAL DENTISTRY

The method of instruction in clinical dentistry is by clinical lectures to the students of each class, accompanied by practical demonstration of various operations on the teeth and neighboring tissues.

Ample opportunity for work in practical operative dentistry is furnished in this department, and the student, by actual practice, receives training in the various dental operations, and in the diagnosis and treatment of diseased conditions of the mouth and teeth.

PROSTHODONTIA

The instruction in prosthodontia consists of a graded course of didactic lectures to the entire class, illustrated by models and diagrams, on the nature, properties, and manipulation of the various materials used in making artificial dentures, crowns, and bridge-work, preparatory to, and in harmony with, the laboratory work in prosthetic dentistry. These lectures extend through the three years of the course.

PROSTHETIC DENTISTRY

Particular attention is given to practical manipulation of vulcanite, celluloid, aluminum, and cast metal, for dentures; to gold-plate work, to preparation of plate for continuous gum and the application of continuous gum to crown and bridge work, as well as the construction of gold crowns and bridges. The natural form, color, and arrangement of the teeth, together

with the entire range of procedure, from taking the impression to the completion of the case and its proper adjustment in the mouth, are thoroughly demonstrated.

ORTHODONTIA

The instruction in the department of orthodontia consists of illustrated lectures dealing with normal development of both temporary and permanent teeth and adjacent tissues, compared with mal-development; also the etiology and treatment of the various deformities of the mouth and teeth.

In addition, the student will be taught the technique and management of practical cases, under the direction of the instructors.

PHARMACOLOGY

Instruction in pharmacology consists of lectures, recitations, and laboratory exercises, twelve hours a week throughout the second half-year. Especial attention is given to the physiological action of drugs in its relation to their therapeutical application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory course is designed to familiarize the student with all medicinal preparations and processes, and consists of exercises in which the class in sections is led to this result practically.

Prescription writing and the metric system will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

PATHOLOGY AND BACTERIOLOGY

The subjects of pathology and bacteriology will be considered together. This method permits showing the relation of bacteria to the disease processes which they produce. The work will consist of lectures, required laboratory work, and demonstrations. The student is made acquainted with the bacteria of the mouth, and is required to cultivate and study the important organisms. He is expected to carry out experiments to demonstrate the production of artificial caries. The subject of general pathology will be thoroughly covered. The special pathology of the mouth,

and of the respiratory and intestinal tracts, will be given particular attention. Inflammation, especially the infectious types, among which are the lesions produced by the pyogenic bacteria, will be carefully considered. The process of repair in soft tissues and bone, and tumors of the mouth and face, are studied from sections of human and experimental lesions, and illustrated by demonstrations of gross specimens. In connection with the study of infectious processes, the specific bacteria will be cultivated and studied. Diseases of the circulatory system are illustrated by lectures and gross demonstrations. The methods of sterilization and their relative efficacy are practically studied, and tests are made of a large series of antiseptic and disinfectant substances.

The pathological and bacteriological department of the School occupies over four thousand square feet of floor space, with a frontage of one hundred and sixty feet. It is excellently lighted. The laboratory furnishes accommodation for one hundred students, and is supplied with all the materials necessary for thorough work.

THEORY AND PRACTICE OF DENTISTRY

The instruction in the theory and practice of dentistry is designed to teach the most advanced scientific discoveries in relation to this art.

It will include such subjects as the action of mouth bacteria, diseases dependent upon dental lesions, dental prophylaxis, oral hygiene, and the ethics of dental practice. The course will be arranged to harmonize with and to supplement the work of the clinical department.

THEORY AND PRACTICE OF MEDICINE

The work in the theory and practice of medicine consists of a series of lectures given to the dental students by members of the Faculty and Board of Instruction of the Medical School. It is intended to include such subjects as general infectious and contagious diseases; syphilis; stomatitis and tonsilitis; diseases of the heart, kidneys, and skin; neuralgia and neurasthenia;

disorders of the alimentary tract; pregnancy; tuberculosis. Lectures upon legal medicine and other subjects will be given. It is believed that a course of this description will be of the utmost practical value to dental students, as it will make them acquainted with the nature of a large class of diseases and conditions which they are liable to meet in the practice of dentistry.

SURGERY

The course in surgery consists of a systematic series of lectures covering its principles. These lectures explain the fundamental facts which should be thoroughly understood by all students who propose to treat any portion of the human body. The lectures are not limited to surgery of the mouth, although especial attention is given to this part of the subject, but are intended to give the dental student a sound knowledge of surgery in general.

Asepsis and anesthesia are minutely discussed, and practically demonstrated in the infirmary, in conjunction with the Professor in Operative Technics and Anesthesia. The student is carefully instructed in the administration of ether and of nitrous-oxide gas. In addition to the daily instruction, one morning in each week is devoted wholly to this work, the class being divided into sections. At this weekly demonstration. cases are presented exemplifying the choice of an anesthetic in the particular case. The danger signals of anesthesia are considered, and the proper treatment explained. Local anesthesia receives careful attention, and its limitations are pointed out.

The technic of aseptic and antiseptic methods in dental work is thoroughly explained, and shown in connection with the demonstrations of anesthetics.

ANESTHESIA AND EXTRACTION

The extracting room, a well-lighted apartment, is supplied with all needful instruments and appliances for extracting teeth and for the performance of the simpler operations in surgery. Ample waiting rooms are adjacent, and also rooms for the care of patients after anesthesia. Administrations of nitrous-oxide gas and ether are made daily. The room is at all times under the personal supervision of the Instructor in Anesthesia.

Requirements

FOR ADMISSION TO THE FIRST-YEAR CLASS

Candidates are admitted in two ways:

1. By credentials.
2. By examination.

1. Admission by Credentials

Graduates of approved colleges or universities, graduates of approved high schools, and students holding Regent's Certificates of the State of New York, are admitted without examination. Candidates west of New York may present full statement of their record in the courses pursued, for consideration by the Committee on Admission.

2. Admission by Examination

Candidates for admission by examination must have received adequate preparation in certain subjects falling in two groups, known respectively as the Required and the Elective Group. A unit represents a year's study in any subject in a secondary school, representing approximately a quarter of a full year's work. Fourteen units are required for admission. A student who has failed in not more than five units may be admitted subject to conditions which he must make up before beginning the studies of the second year.

The Required Group

Elementary English, 3;
An Elementary Foreign Language, Ancient or Modern, 2;
Elementary Physics, 1;
Elementary Algebra, 1½;
Plane Geometry, 1.

Candidates are required to present all the subjects of the Required Group and a selection of subjects from the Elective Group aggregating 5½ units, according to the value indicated below.

The Elective Group

ELEMENTARY

Greek, 2	Zoology, 1
Latin, 2	Geology and Geography, 1
French, 2	Mechanical Drawing, 1
German, 2	Freehand Drawing, 1
History, 1	Shop Work, ½ to 2
Chemistry, 1	Economics, ½
Botany, 1	Anatomy, Physiology, and Hygiene, ½

INTERMEDIATE

Latin, 1	German, 1
French, 1	

ADVANCED

Greek, 1	History
Latin, 1	Algebra, ½
French, 1	Trigonometry, ½
German, 1	Solid Geometry, ½

Detailed information concerning the amount and character of the work required in preparation will be sent on application.

ADVANCED STANDING

Students who have taken courses in other accredited dental schools are admitted to advanced classes upon presenting satisfactory evidence that they have passed the examinations required for the class they desire to enter.

Students presenting evidence of a course equivalent to the course in general chemistry given in the first year are allowed to anticipate the subject upon passing the fall examinations.

PROMOTION

Students who have passed a majority of the examinations of the first-year class, and all entrance conditions, may be promoted to the second-year class. Students who have passed all the first-year and a majority of the second-year examinations may be admitted to the third-year class.

GRADUATION

Candidates for the degree of Doctor of Dental Medicine must have fulfilled the following minimum requirements: —

1. They must present a certificate that they are twenty-one years of age and of good moral character.

2. They must have attended at least three full courses of lectures in some accredited dental school, the last of which shall have been at this School, and no two courses in the same twelve months.

3. They must have passed all the examinations required, and have satisfied the professors of clinical and prosthetic dentistry of their ability to meet satisfactorily the requirements of the profession.

4. They must have satisfactorily dissected under the direction of a demonstrator of anatomy.

5. They must have paid all fees.

CHANGE OF REQUIREMENTS

The Faculty reserve the right to change all requirements without further notice.

HONORS

Students who have attended three full courses of lectures at this school and have attained an average of ninety per cent. in their examinations shall be eligible to "*summa cum laude*"; and students who have attained an average of eighty per cent. shall be eligible to "*cum laude*" in connection with the degree received.

STANDING AND CERTIFICATES

At the end of the session a certificate of his standing for the year is sent by mail to each student. No marks will be sent or credit given to any student who is in arrears with the Bursar.

EXAMINATIONS

There are two periods of examination held each year in the school building. Examinations are in writing, and are held at the close of the course in the spring, and previous to the opening of the regular course of lectures in the fall.

The spring examinations are for:—

(*a*) Students commencing the study of dentistry.
(*b*) Promotion.
(*c*) Graduation.

The fall examinations are for :—

(*a*) Students commencing the study of dentistry.
(*b*) Removal of conditions in :
1. Previous entrance examinations.
2. The first-year course.
3. The second-year course.

Students intending to take the fall examinations (other than entrance) *are required* to notify the Secretary on or before August 31.

The fall examinations for the removal of conditions (other than entrance) will commence Monday, September 9, 1912, at 10 A.M. A detailed list of the subjects in which examinations are given, with the day and hour of each, will be mailed after August 31, on application.

REGISTRATION AT EXAMINATIONS

In each examination (except those for entrance) students who fail to sign the registration blank provided for the purpose shall receive no credit for that examination.

The examinations in course are as follows :

EXAMINATIONS

First Year. *Finals* in Anatomy, Physiology, General Chemistry, Histology, and Operative Technics.
Progress in Prosthetic Dentistry and in Prosthodontia.

Second Year. *Finals* in Materia Medica, Pharmacology, Dental Chemistry, Pathology, Bacteriology, and Dental Histology.
Progress in Operative Dentistry, Clinical Dentistry, Orthodontia, Prosthetic Dentistry, and Prosthodontia.

Third Year. *Finals* in Oral Surgery, Orthodontia, Theory and Practice, Operative Dentistry, Clinical Dentistry, Prosthetic Dentistry, and Prosthodontia.

TEXT BOOKS

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy.—Gray, Weisse, Quain, Morris, Cunningham, Solatta, McMurrich.

Physiology.— Syllabus, Dearborn's Text-Book of Physiology, Howell, Landois, Verworn, Schäfer, Morat, Hutchinson.

Chemistry.—Simons's Manual, Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis, Mitchell's Dental Chemistry.

Dental Histology and Microscopy.—Syllabus, Stohr's Histology, Tome's Dental Anatomy (latest edition).

Pathology.—Syllabus, Miller's Micro-Organisms of the Human Mouth, Burchard's Dental Pathology.

Hygiene.—Egbert's Hygiene and Sanitation.

Materia Medica and Therapeutics.—Hare, Sollman, Cushny Thornton's Dose Book and Manual of Prescription Writing.

Orthodontia.—Malocclusion of the Teeth, Angle (7th edition); Orthodontia, Guildford (4th edition); Internal Anatomy of the Face, Cryer.

Practice of Surgery.—American Text Book, Marshall's Injuries and Surgical Diseases of the Jaws, International Text-book of Surgery.

Dental Science and Operative Dentistry.—Kirk's Operative Dentistry, Garretson's Oral Surgery, Black's Dental Anatomy, Weeks's Operative Technics, American System of Dentistry, Harris's Practice of Dental Surgery, Taft's Operative Dentistry.

Prosthetic Dentistry.—Essig's American Text-book of Prosthetic Dentistry, Richardson's Mechanical Dentistry, Evans's Crown and Bridge Work, Gilbert's Vulcanite and Celluloid.

Bacteriology.—Abbott, Woodhead, Sternberg.

Medical Dictionary.—Dunglison.

FEES AND EXPENSES

A matriculation fee of *five dollars* is payable each year.

A charge of *one hundred and fifty dollars* for tuition is payable in advance. If not paid before November 1, there will be an additional charge of *five dollars*.

If desired, the tuition may be paid in instalments, in which case an additional charge of five dollars is made, and the fees are then paid as follows: —

First payment: — Five dollars for matriculation fee and seventy-five dollars on account of the tuition, a total of *eighty dollars*, payable at the beginning of the first semester.

Second payment: — Seventy-five dollars, the balance of the tuition, and five dollars, the additional charge, a total of *eighty*

dollars, payable at the beginning of the second semester, or before February 1.

There is no charge for laboratory supplies. Anatomical material will be furnished at cost.

No student will be admitted to the exercises of the first half-year who has not paid his matriculation fee and at least one-half the tuition, and no student will be admitted to the exercises of the second half-year who has not paid his fees in full.

Students leaving the school have no claim for tuition paid.

Students who have failed twice in a subject are required to pay a fee of five dollars for each subsequent examination in that subject.

POST-GRADUATE FEES

Post-graduate fee for graduates of other schools . .	$150.00
Single course	50.00
Post-graduate fee for graduates of this School . . .	60.00
Single course	30.00
Anatomical material	at cost

The Bursar of the College will be at the School Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from October 1 to June 1.

There are no scholarships connected with the School.

The expenses of living in Boston need not exceed those in small cities and villages. Good board, including room, heat, and light, can be obtained in the vicinity of the school at from $5.50 to $7 a week. Students will not be allowed to occupy rooms disapproved by the Faculty.

OUTDOOR DEPARTMENT

Clinical Dentistry

For many years it has been the custom of the authorities of this School to furnish to certain charitable and penal institutions qualified dentists for the purpose of alleviating cases of actual suffering. Applications for an extension of this service should be made to E. A. Johnson, D.M.D., Department of Clinical Dentistry, Tufts College Dental School, Boston, Mass.

Prosthetic Dentistry

In a manner similar to the above it has been the custom of the authorities of this School to furnish to the inmates of certain institutions for the aged, at the nominal charge of the cost of materials, artificial teeth and appliances. Institutions desiring to avail themselves of the privilege should apply to C. M. Pettengill, D.M.D., Department of Prosthetic Dentistry, Tufts College Dental School, Boston, Mass.

STATE BOARD EXAMINATION

Students shall not take a State Board Examination in Dentistry previous to the time of final examinations of the third year, without written permission from the Secretary of the Dental School.

General Information

The Tufts College Dental School is a member of the National Association of Dental Faculties, and conforms to its rules, as well as to those of the National Association of Dental Examiners.

All students must be registered and in attendance within ten days after the commencement of lectures.

LIBRARIES

The students of this School have free access to the Dental School Library, to the Library of Tufts College, to the Boston Public Library, and to the Boston Medical Library.

The library at the Dental School is open daily from 9.00 a. m. to 5.00 p. m., except Sundays and holidays. This library is intended to provide *text books for reference*, and the latest editions of all text books used in the school are furnished. These cannot be taken from the Reading Room. In addition, the library contains a large number of reference books in general medicine and general surgery, and in all special branches of each. These works are loaned to the student free of charge, and can be taken out. Files of recent medical journals are a valuable addition to the school library.

The Boston Medical Library, which is situated near the School, has one of the largest and most complete collections of medical works in existence. It contains not only bound volumes of every important book in medical literature, but also a very extensive collection of monographs and pamphlets on special subjects. All the leading medical journals are on file for inspection. The Boston Medical Library extends its privileges, under certain conditions, free of charge to students of this School. Its rooms are open daily from Oct. 1 to May 31, from 9.30 A. M. to 10.00 P. M., except Sundays and holidays. The hours on Saturdays are from 9.30 A. M. to 6 P. M.

SESSIONS OF THE SCHOOL

The annual course of lectures begins on the last Wednesday in September of each year, and continues until the last Wed-

nesday in May. The annual course of lectures for 1912–13 will commence Wednesday, September 25, 1912, at 3 p.m.

VACATIONS

There are no exercises at the School during three days at Thanksgiving, ten days at Christmas, and the week beginning March 3, nor upon Columbus Day, Washington's Birthday, Patriots' Day, and Memorial Day.

APPLICATIONS

Students who intend to enter the School for the first time must obtain from the Secretary an application blank, which they are required to fill out and return to him. Application blanks will be mailed upon request.

REGISTRATION

Registration is required of all students, each year. Registration for the Session 1912–13 will commence Monday, September 9, and will close Saturday, October 5, 1912.

Registration is conducted at the school building only.

ANNOUNCEMENT

Requests for the annual catalogue, and all other communications relating to the business of the School, should be addressed to the Secretary, FREDERIC M. BRIGGS, M.D., Tufts College Dental School, Boston, Mass.

Summer Courses

The following subjects are offered during the summer months:—

PHYSIOLOGY

A course in physiology will be given during the months of June and July by, or under the direction of, the Professor of Physiology. For particulars of the course application should be made to Dr. Dearborn.

HISTOLOGY

A summer course will be given under the direction of the Professor of Histology. Particulars as to the scope of this work, and the fee, may be learned upon application to Dr. Bates.

THE BROMFIELD-PEARSON SCHOOL

The Bromfield-Pearson School

BOARD OF INSTRUCTION

FREDERICK W. HAMILTON, A.M., D.D., LL.D., PRESIDENT

GARDNER C. ANTHONY, A.M., Sc.D., DEAN
Professor of Technical Drawing

SAMUEL C. EARLE, A.M.
Professor of English

CHARLES E. STEWART, S.B.
Assistant Professor of Mechanic Arts

GEORGE F. ASHLEY
Assistant Professor of Technical Drawing

ERNEST R. GREENE, A.M.
Instructor in Modern Languages

ALEXANDER DILLINGHAM, A.M.
Instructor in Mathematics

The Bromfield-Pearson School

The Bromfield-Pearson School is intended to meet the wants of young men whose preparation for an Engineering course may be partially deficient in one or more of the required branches, but whose practice and experience in the applied part of Engineering may qualify them to pursue college work while making up these deficiencies. By this means an engineering education is made possible to those who may have been deprived of the opportunities for obtaining the necessary preparation, or who may have allowed considerable time to elapse between the high school and the college course. A mature mind, industrious habits, and a keen appreciation of the value of the higher education in Engineering are essential qualifications for engaging in this work.

As it is the intention of the Trustees to limit the membership to those earnest and somewhat mature students who cannot afford the time ordinarily required in the fitting school, candidates will not be received from manual training and high schools.

ADMISSION

Students intending to join the School must obtain from the Dean an application blank, which they are required to fill out and return. On receipt of this statement they will be informed as to the conditions of entrance and the program of studies which it will be possible to pursue.

REGULATIONS

Students are subject to all the rules governing members of the College.

All preparatory work must be completed during the year, as no student will be admitted to the School for more than one year.

Students admitted to college classes will be required to obtain a somewhat higher per cent. than the minimum requirement for engineering students.

On the satisfactory completion of the preparatory work students will be given a certificate of admission to the College. They will also receive credit for college work which may count toward a degree.

The President and the Dean have final authority concerning admission, promotion, and discipline.

EXPENSES

The tuition fee is one hundred and fifty dollars * a year, payable as follows: seventy-five dollars on or before October 1, and the remainder on or before March 1.

A registration fee of five dollars is charged each entering student, and is payable at the time of registration.

No part of the tuition fee will be refunded to pupils who for any reason withdraw from the school before the close of the term for which the fee is paid.

The cost of table board is from $4.00 to $5.00 per week. Furnished rooms may be had at $1.50 or $2.00 a week. Other expenses vary with the economy of each student. Students living in the college dormitories furnish their own rooms.

The following estimates represent the fixed annual expenses: —

Tuition	$175.00	$175.00
Half-room rent	20.00	91.00
Board, $4.00 to $5.00 a week (36 weeks)	144.00	180.00
Physical training		15.00
Books, instruments, and supplies	15.00	25.00
Total	$354.00	$486.00
Registration-fee, for entering students		$5.00

For other information address GARDNER C. ANTHONY, Dean of the Bromfield-Pearson School, Tufts College, Mass.

* In 1912–13 and thereafter, one hundred seventy-five dollars.

The Harpswell Laboratory

INSTRUCTORS

J. STERLING KINGSLEY, Sc.D.
Director, and Professor of Biology

HERBERT V. NEAL, PH.D.
Professor of Biology, Knox College, Galesburg, Ill.

In 1898 summer instruction in biology was given at South Harpswell, Maine, and in 1901 the college erected a small laboratory at that point, enlarging it in 1902. The location is admirably adapted for biological research, since the fauna of Casco Bay is extremely rich. Over forty papers have been published based on researches carried on in the laboratory. The laboratory is equipped with boats, dredges, glassware, apparatus, and reagents, for study on the lines of anatomy and embryology. There is also a small library of the most important works.

South Harpswell is two hours by steamer from Portland. It is at the extremity of a narrow peninsula ten miles in length, and has a cool climate. There are several hotels and boarding houses, where board and rooms may be had at five dollars a week and upward.

The Harpswell Laboratory will be open free during the summer of 1912, for research work only, under the direction of DRS. KINGSLEY and NEAL.

For circulars and other information concerning the Harpswell Laboratory, inquiries should be directed to PROFESSOR J. S. KINGSLEY, Tufts College, Mass., or to PROFESSOR H. V. NEAL, Galesburg, Ill.

DEGREES AND HONORS

1910-1911

Fifty-Fifth Annual Commencement

June 21, 1911

HONORARY DEGREES CONFERRED

Doctor of Laws

Marion Leroy Burton

Doctor of Science

Albert Potter Wills

Master of Arts

Conrad John Rueter

DEGREES CONFERRED IN COURSE

Bachelors of Arts

Gladys Louise Baker
Katharine Neal Bickford
Minot Joseph Brown (*cum laude*)
John William Cosgrove, Jr.
George Costanza
Audrey Lovejoy Duffey
Charles Gott (*cum laude*)
Evelyn Hearsey
Bertram Dyer Hulen
Charles Douglas Kean
Sue Levina Knight
Parker McCollester (*magna cum laude*)
Harold Eugene Moffitt (*cum laude*)
Joseph Webster Morton (*cum laude*)
Ruth Moyer
Mary Stanton Mulry
George David Richert
Mildred Beatrice Sawyer
Bertha Maria Shepard
Marion Christine Shorley (*summa cum laude*)
Antonia Adeline Steinberg
Earle Thomas Thibodeau
Leonard Shute Thompson
Hazel White
Gladys Maud Wilbur
Zilpah Wilde (*magna cum laude*)

Bachelors of Science in Chemistry

Carroll Thomas Daley
Harold Quimby Gallupe
Laura Lucina Granger
Elmer Augustus Gurney (*cum laude*)
Leroy Greenwood Jackson
Elmo Douglas MacCurdy
William Joseph McKenna
Ralph Loring Willis

Bachelors of Science in General Science

Elmer Ira MacPhie
Edith Marian Sturtevant
Alfred Baylies White

Bachelor of Science, Medical Preparatory Course

Norman Wilkinson Gillespie

Bachelors of Science in Civil Engineering

Clifford Neal Amsden
Alexander Watt Blyth (extra ordinem as of the Class of 1910)
Joseph Brickley Dunn
Bernard Elbert Gray
George Laird Hall
Mark Howard Houghton
Osgood Stevens Kinsman
James Brower Lowell
Lawrence Kennedy Marshall
Walton Hooker Nason
Donald Percy Ritschy
Fred Burgess Skillin
Daniel Maynard Sullivan
Allston Kinsley Thorndike

Bachelors of Science in Structural Engineering

Wolstan Elliot Browne
Howard Allison Gray (*magna cum laude*)
Harold Dudley Hussey (*summa cum laude*)
Allen Friend McLane (*cum laude*)
Charles Henry Mergendahl
Harold Arthur Nelson (*magna cum laude*)
Ernest Snyder VanDemark (*cum laude*)
Sylvanus Davis Winship

Bachelors of Science in Electrical Engineering

Frank William Anderson
Charles Albert Bachelder
Fred Ingalls Chapman
Frank Meloon Coldrick (*magna cum laude*)
Clarence Hoffman Dittrick
Benjamin Leslie Dolbear
Arthur Louis DuBroy
Talma Temple Greenwood (*cum laude*)
Edwin Henry Hansen
Everett Wesley Ireland
Robert Mossman Knight, A.B.
William Parker Little
James Calvin MacKay
Joseph Frederick Thiele Mann (*cum laude*)
Harold DeCarterette Miller
Russell Jewett Neagle
Harold Francis Stevens
Edward Martin Towne (*cum laude*)
Max Golden Vincent
Lewis Morton Whiting
Russell Perin Wise

Bachelors of Science in Mechanical Engineering

George Ellis Couillard
William Mathias Edmonstone

Bachelor of Science in Chemical Engineering

Carrol Nathan Whitney

Bachelors of Sacred Theology

Vernon Edmund Blagbrough
Frederick Algernon Wilmot, A.B.

Doctors of Medicine

Joseph Barone
Roland Augustus Behrman (*cum laude*)
Harry Belin (*cum laude*)
Paul Drake Blanchard
Samuel Gilbert Blount (*cum laude*)

Alfred George Bolduc (extra ordinem as of the Class of 1910,
Francis Peter Boyd (*cum laude*)
James Francis Boyd (*cum laude*)
Clifton Leon Buck (*cum laude*)
Daniel Cantarow, Ph.G. (*cum laude*)
Louis Raymond Cassels
Walter Wells Caswell
Charles Henderson Chandler
Edward Augustus Coates, Jr. (*cum laude*)
Nathaniel Maurice Cohen (*summa cum laude*)
Ethel Frances Comerford
Margaret Blanche Cooney (*cum laude*)
Sarah Elizabeth Coppinger
Louis Ward Croke (*cum laude*)
Frank Edward Dow (extra ordinem as of the Class of 1910)
James Francis DuVally
John Edward Dwyer, Jr.
Samuel Edelstein
Ellsworth Peter Garipay
Joseph Francis Golden (*cum laude*)
Harry John Hagerty (extra ordinem as of the Class of 1910)
Levon George Hagopian
Edward Henry Lewis Harnett (extra ordinem as of the Class of 1910)
Daniel James Leo Harrington (extra ordinem as of the Class of 1910)
John Henry Hartnett
Leonard Watson Hassett (extra ordinem as of the Class of 1910)
Frank Freeman Henderson
Thomas Francis Hennessey
Herbert Eliot Herrin (extra ordinem as of the Class of 1910)
Frank Hughes (extra ordinem as of the Class of 1910)
Franklin Reynolds Ireson (*cum laude*)
Alfred Emile Johnson, Jr. (*cum laude*)
Gertrude Christine Johnson
Henry Kaplovitch (*cum laude*)
Stanislas Albert Lamoureux (extra ordinem as of the Class of 1910)
Brace Irving Lawley (extra ordinem as of the Class of 1910)
Christina Margaret Leonard (extra ordinem as of the Class of 1910)
Joseph Arthur Macaulay
Roland Chester Mackenzie
David Finlay Marr
Edward Martin (*cum laude*)
Eugene Francis McCarthy (extra ordinem as of the Class of 1910)
Francis Joseph McMahon
Adlor Eugene Messier (extra ordinem as of the Class of 1910)
William Henry Miller, A.B.
Alfred Irving Morse (extra ordinem as of the Class of 1910)
Karl Goff Morse (extra ordinem as of the Class of 1910)
Frederick William O'Brien (*cum laude*)
Lamert Oulton, Ph.D. (*cum laude*)
Samuel George Pavlo (*cum laude*)
Samuel Maurice Pearl (*cum laude*)
Alphonse Joseph Peter
George Henri Poirier (extra ordinem as of the Class of 1910)
Willard Leslie Quennell
Robert Stanley Quinby (*cum laude*)
Jessie Wilhelmine Robertson
Joseph Adjutor Ruel
Celeste Beatrice Shaw
Jane Gray Stone (*cum laude*)
Marie Charlotte Strom (*cum laude*)
Guy Daniel Tibbetts (*cum laude*)
Edwin Prescott Tripp (extra ordinem as of the Class of 1910)
Daniel Edward Welch (extra ordinem as of the Class of 1910)
Earle Carlisle Willoughby
Edwin Theodore Wyman (*cum laude*)
Annie Roberts Young

Doctors of Dental Medicine

Edwin Carlisle Baker (extra ordinem as of the Class of 1910)
Peter Barton
Charles Harper Billings (extra ordinem as of the Class of 1910)
Albion Parris Bonney
John Bernard Brown (*cum laude*)
Maurice Vivian Brown, A.B. (*cum laude*)
Myron Eldridge Bryant
John Fletcher Burnham
Ross Hunt Butterfield
Francis Joseph Coyne (extra ordinem as of the Class of 1910)
Harold Francis Curtis (*cum laude*)
William Vincent Denning (*cum laude*)
Frank Amos Derby
Raymond Ashton Derbyshire
Paul Boghos Djinivis (extra ordinem as of the Class of 1910)
Ralph Lindsay Faulkner
Timothy Michael Fleming
Fred Battles Gammon
John Francis Golden
Percy James Grant
J. Herman Haines (*cum laude*)
Samuel Worcester Fuller Hamilton
Thomas Joseph Hartigan
David Joseph Herlihy
Clarence Edmund Jenkins
John Joseph Kelley (*cum laude*)
Louis Frederick Kline (extra ordinem of the Class of 1910)
Joseph King Knight, Jr., A.B. (*cum laude*)
Clarence Byron Laffin (*cum laude*)
John Henry Leonard
Roland Henry Lewis
Arthur Alexander Lockhart
Frederick William MacSween
James Joseph McKenna
William Francis McNamara
Francis Frederick McVey
William Ladd Moody
George Nader
George Francis Noonan
Richard Henry Norton, Jr.
Edward Michael O'Connor
Raymond Chester Palmer (extra ordinem as of the Class of 1910)
Thomas Edward Power
Francis Mark Quinlan
Cecilia Marie Rockett
James Edward Ryan (*cum laude*)
George William Shay
Thomas Paul Stack
William Charles Tannebring
John Leonard Wagner
Myron Wessler (extra ordinem as of the Class of 1910)
Thomas Henry Yates

Masters of Arts

Gladys Marion Adams, A.B. (English)
Levi Thomas Hopkins, A.B. (History and Public Law)

Masters of Science

Fred Crosby Baker, B.S. (Chemistry)
Henri Francis Chadwick, B.S. (Engineering)
George Augustus Burnham, B.S. (Engineering)
George Prescott Fuller, B.S. (Chemistry)
Carleton Parker Jones, B.S. (Chemistry)

Jackson College for Women

Bachelor of Arts

Marjorie Bonner Patterson

Commencement Parts

Minot Joseph Brown, Cand. A.B.: "An Appreciation of the Classics"
Marion Christine Shorley, Cand. A.B.: "The Universalism of Herder"
Allen Friend McLane, Cand. B.S.: "The Engineer of To-day"
*Joseph Francis Golden, Cand. M.D.: "Preventive Medicine"
Joseph King Knight, Jr., A.B., Cand. D.M.D.: "Etiology and Prevention of Irregularities of the Teeth"
*George Prescott Fuller, B.S., Cand. M.S.: "Some Properties of Semicarbazide"
Frederick Algernon Wilmot, A.B., Cand. S.T.B.: "A Type of Modern Religion"

Honors

Frank Meloon Coldrick (Electrical Engineering)
Howard Allison Gray (Structural Engineering)
Harold Dudley Hussey (Structural Engineering)
Parker McCollester (Greek)
Harold Arthur Nelson (Structural Engineering)
Marion Christine Shorley (German)
Zilpah Wilde (French)

Honorable Mention

Minot Joseph Brown (Latin)
Charles Gott (English)
Talma Temple Greenwood (Electrical Engineering)
Elmer Augustus Gurney (Chemistry)
Harold Dudley Hussey (Civil Engineering)
Joseph Frederick Thiele Mann (Electrical Engineering)
Allen Friend McLane (Structural Engineering)
Harold Eugene Moffitt (Philosophy)
Joseph Webster Morton (Music)
Marion Christine Shorley (French)
Edward Martin Towne (Electrical Engineering)
Ernest Snyder VanDemark (Structural Engineering)

Awards of Prizes, 1910-1911

Scholarship of the Class of 1882

Harry Oscar Weber

Scholarship of the Class of 1898

William Shipman Maulsby

*Excused

Greenwood Prize Scholarship in Oratory
Harry Coombs

Goddard Prize in History and Public Law
Ralph Hasty Bragdon

Moses True Brown Scholarship
Alva Vivian Woode

Alpha Omicron Pi Scholarship
Dorothy Russell Entwistle

DeWitt C. Tomlinson Prize Scholarship
Gladys Marion Adams

Rhetorical Prizes

First Prize
Frank Hathaway Towsley

Second Prize
Will Calvin Harvey

Third Prize
Leonard Swan Whippen

REGISTER OF STUDENTS

Graduate School

Resident Students

BRAY, HUBERT EVELYN — *Great Yarmouth, England* — Dean, 6
A.B., 1910 Second Year Mathematics

GALLUPE, HAROLD QUIMBY — *Everett* — West, 7
B.S., 1911 First Year Chemistry

HAYFORD, FRANK LESLIE — *Brookline* — *1931 Beacon St.*
Ph.B., 1901 A.B., 1902 First Year Economics

HEARSEY, EVELYN — *Gleasondale* — Metcalf, 8
A.B., 1911 First Year Chemistry

HULEN, BERTRAM DYER — *Cliftondale* — Δ T Δ House
A.B., 1911 First Year History and Public Law

MORTON, JOSEPH WEBSTER — *Everett* — *19 Waverly St.*
A.B., 1911 First Year Music

MOYER, RUTH — *Hartford, Conn.* — Richardson, 10
A.B., 1911 First Year English

Non-Resident Student

PERKINS, LLEWELLYN ROOD — *Franklin*
B.S., 1898 A.B., 1902 Second Year Mathematics

Department of Arts and Sciences

[In the following list the course pursued by each student is indicated by the Italic letters immediately following the name. The signs used are as follows: courses leading to the degree of A.B., *ab*; to the degrees of B.S., *bs*—in Civil Engineering, *ce*; in Structural Engineering, *st e*; in Electrical Engineering, *ee*; in Mechanical Engineering, *me*; in Chemical Engineering, *ch e*. No differentiation is made in the studies of the first two years.

The third column records the home address, which is in Massachusetts unless stated to be elsewhere. The fourth column gives the address at Tufts College, unless the street is printed in Italics, in which case it is a part of the home address.]

Senior Class

Anderson, Arthur Julius	*st e*	*S. Manchester, Conn.*	Δ Υ House
Atwater, Harry Arthur	*ch e*	*Somerville*	*1 Avon St.*
Bacon, Charles Aaron	*ee*	*Bedford*	Σ Τ Α House
Bailey, Ernest Wing	*st e*	*Medford*	*7 Taylor St.*
Bicknell, Harry Irving	*ee*	*Weymouth*	Commons Club
Blagbrough, Vernon Edmund, S.T.B. (1911)	*ab*	*Orange*	Paige, 18
Bogue, Robert Herman	*bs*	*Tufts College*	*29 Capen St.*
Bragdon, Ralph Hasty	*ab*	*S. Boston*	Α Τ Ω House
Brandt, Arthur Williams	*st e*	*Ontario Centre, N.Y.*	Paige, 8
Brigham, Ferdinand	*ab*	*S. Framingham*	Δ Τ Δ House
Brown, Stanley Morton	*st e*	*Chelsea*	Α Τ Ω House
Bruerton, Courtney	*ab*	*Malden*	Dean, 7
Bugbee, Edwin Percy	*me*	*Methuen*	West, 26
Bugbee, Ralph Lawrence	*ee*	*Methuen*	West, 26
Butler, Benjamin Jarvis	*ee*	*Somerville*	*103 Bartlett St.*
Charnock, Percy Clyde	*ce*	*Tufts College*	Α Τ Ω House
Doble, Frank Currier	*ee*	*Methuen*	Paige, 7
Fairbank, Parker Wheeler	*ee*	*Sudbury*	Σ Τ Α House
Fisher, Austin Wellington	*ab*	*Fitchburg*	Θ Δ Χ House
Frost, Walter Sprague	*bs*	*Roxbury*	Α Τ Ω House
Greenough, Maurice Brown	*st e*	*Groveland*	Commons Club
Hamill, George Keenan	*ch e*	*Stoneham*	*18 Park St.*
Harris, Nathan Conant	*ce*	*Auburn, Me.*	Δ Τ House
Herrick, Ralph Morris	*st e*	*Allston*	Dean, 13
Hooper, Allen Gunnison	*ab-e*	*Tufts College*	*124 Professors Row*
Hudson, Herbert Harold	*ee*	*Boxford*	Δ Τ Δ House
Jackman, Irving Wilson	*me*	*Cambridge*	*166 Chestnut St.*
Jones, William Moshier	*st e*	*Swampscott*	Σ Τ Α House
Killion, William Vincent	*ce*	*Malden*	Δ Τ House
Lamont, Richard Roy	*ab*	*W. Somerville*	*13 Conwell Ave.*
Larrabee, Ernest Alonzo	*me*	*Marlboro*	Commons Club
Libby, John Edgar	*ab*	*Auburn, Me.*	Δ Τ House

Lynch, John Francis	*ab*	*Cambridge*	*29 Dudley St.*
MacKillop, Daniel Alexander	*ee*	*Grand River Falls, N. S.*	613 Tremont St., Boston
Mackin, Clarence Harvey	*ab*	*Manchester*	A T Ω House
Mansfield, Lloyd Lewis	*ce*	*Swampscott*	Commons Club
Maulsby, William Shipman	*ab*	*W. Somerville*	Z Ψ House
Merrill, Frank Wood	*st e*	*W. Somerville*	*90 Curtis St.*
Murray, Clifford Robert	*ce*	*Wethersfield, Conn.*	West, 22
Page, Roland Humphrey	*st e*	*Boston*	Z Ψ House
Patten, Francis Howard	*ee*	*Marion*	Σ T A House
Phalen, Harold Romaine	*me*	*Acton*	Σ T A House
Phelps, Edward Parkhurst	*ch e*	*Greenwood*	Paige, 20
Quennell, Alvin William	*ee*	*Roxbury*	A T Ω House
Robinson, Willis Brainard	*ab*	*Hingham Centre*	Paige, 9
Savage, Percy Godfrey	*bs*	*Medford*	Δ T House
Schwartz, Samuel	*st e*	*E. Billerica*	139 Morrison Ave., W. Somerville
Weber, Harry Oscar	*st e*	*South Wales, N. Y.*	Σ T A House
West, John Albert	*ch e*	*Wakefield*	Commons Club

Junior Class

Adams, John Harold	*ee*	*Passaic, N. J.*	Δ T House
Allen, Herbert Joseph	*bs*	*Ayer*	Θ Δ X Aouse
Atwater, Ralph Wight	*st e*	*Somerville*	*1 Avon St.*
Azevedo, Renato de Almeida	*e*	*Sao Paulo, Brasil*	West, 20
Blanchard, Frank Nelson	*ab*	*Tufts College*	*2 Curtis Ave.*
Bush, Vannevar	*ee*	*Chelsea*	A T Ω House
Carter, Louis Hayward	*bs*	*E. Weymouth*	Δ T House
Colman, Roger Ammiel	*ch e*	*Somerville*	*151 Central St.*
Coombs, Harry	*bs*	*Tufts College*	Paige, 28
Davis, Albert William	*bs*	*S. Boston*	*146 L St.*
Dennett, George Franklin	*ce*	*Cambridge*	Paige, 14
Echeverria, Carlos Porfirio	*me*	*Mexico City, Mex.*	110 Hunt Ave., Boston
Etheridge, Harold Lowell	*ee*	*Somerville*	West, 2
Fairbanks, Frank Bates	*ab-e*	*Passaic, N. J.*	Δ T House
Fisher, George	*me*	*Boston*	*50 Salem St.*
Flint, Fred Warren	*ce*	*W. Somerville*	*22 Dover St.*
Freeman, Harris Howard	*ce*	*Somerville*	*24 Bonner Ave.*
Fuller, Philip Ely	*ce*	*Thorndike*	Commons Club
Gaskin, William	*ab-bd*	*Stafford, Conn.*	Paige, 25
Goodwin, Joseph Michael	*ee*	*Stoneham*	*35 Pleasant St.*
Harrington, Rufus Frost	*bs*	*Medford*	*21 College Ave.*
Hartshorn, Carl Larrabee	*ch e*	*W. Somerville*	Paige, 12
Hazeltine, Burt Alden	*st e*	*W. Somerville*	West, 10

Isola, Vico Cacciatori	*bs*	*Waban*	Θ Δ X House
Johnson, Philip Woodbury	*st e*	*Methuen*	West, 15
Kattelle, Laurence Watson	*ce*	*W. Newton*	West, 15
Keegen, John Louis Charles	*ab*	*Brookline*	West, 12
Kendall, Harrison Shattuck	*st e*	*Waverley*	*146 Mill St.*
Lawlor, James Joseph	*ce*	*Chelsea*	*57 Crescent Ave.*
Lloyd, George Adolph	*ce*	*Somerville*	*68 Albion St.*
Lovering, Stanley Hutchinson	*ee*	*W. Medford*	Paige, 22
Lowe, Robert Manning	*ab*	*Rockport*	Δ T Ω House
Mansfield, Robert Chapman	*ce*	*Swampscott*	East, 28
Marble, Earl Robert	*ch e*	*Attleboro*	Σ T Δ House
Marden, Leslie Ona	*ce*	*W. Somerville*	*20 Powder House Ter.*
Martins, Joseph da Silveira	*ee*	*Azores Islands*	West, 20
McAuliffe, John Augustin	*ce*	*Dorchester*	West, 11
Medeiros, Roger Maria de Carvalho	*ee*	*Azores Islands*	West, 19
Monge, Louis Ernest	*bs*	*Quito, Ecuador*	39 Hemenway St., Boston
Mountfort, Sumner Leighton	*bs*	*Portland, Me.*	Θ Δ X House
Nickerson, Roy Gilchrist	*bs*	*Provincetown*	Z Ψ House
Nolan, Conrad	*ce*	*Jacksonville, Fla.*	120 Curtis St.
Olson, Edward Frederick	*st e*	*Medford*	*79 Medford St.*
Page, Fred Odell	*ab*	*Plainfield, Vt.*	49 Bromfield Rd.
Parker, Levi Wright	*ee*	*Somerville*	*45 Dartmouth St.*
Pecker, Albert David	*ce*	*Marblehead*	West, 16
Phelps, Harry Louis	*ce*	*Marlboro*	West, 16
Phillips, Wendell Codding	*ee*	*Dedham*	Δ T Ω House
Prentiss, John Herbert	*ee*	*Belmont*	*206 Prospect St.*
Risegari, George	*st e*	*Somerville*	*28 Claremon St.*
Roberts, Raymond Moulton	*st e*	*Melrose Hlds.*	*124 Franklin St.*
Rorty, James Hancock	*ab*	*Middletown, N.Y.*	Z Ψ House
Sargent, Ralph Edward	*st e*	*Annisquam*	West, 6
Searle, Dana Aubrey	*me*	*Franklin*	Commons Club
Shute, Philip Cushing	*ab*	*Salem*	Δ T House
Sokolovsky, Jacob Max	*ce*	*Boston*	Paige, 5
Sterling, Lewis Edwin	*ce*	*Everett*	West, 14
Strecker, Harry Louis	*ee*	*Roxbury*	West, 27
Strong, William Millgrove	*bs*	*Everett*	Dean, 14
Stryker, Henry Bernard	*ee*	*Cambridge*	Δ T Δ House
Swenson, Ernest Siegfried	*ab*	*Medford*	Δ T House
Taylor, Prentiss Willard	*ce*	*Hinsdale, N. H.*	West, 9
Tosi, Joseph Andrew	*st e*	*Revere*	Δ T House
Weaver, Frederic Nixon	*st e*	*Dorchester*	West, 11
Whippen, Leonard Swan	*st e*	*Kingston, N. H.*	Σ T Δ House

Sophomore Class

Abbott, Porter Sheldon	*e*	*Somerville*	East, 20
d'Albergaria, José Soares	*e*	*Azores Islands*	East, 12
Alexander, Charles Winthrop	*bs*	*Roxbury*	West, 18
Avery, Walter Roger	*e*	*Dorchester*	West, 30
Ayer, Perley Fay	*e*	*Portland, Me.*	West, 18
Campbell, Donald Kenneth	*ab*	*Tyngsboro*	West, 30
Carlson, Carl Oscar	*e*	*Quincy*	Paige, 13
Chandler, Warren Rufus	*bs*	*Medford*	Commons Club
Cosgrove, Frederick Sylvester	*bs*	*Medford*	Δ T House
Crispin, Russell Milton	*e*	*W. Somerville*	*31 Chandler St.*
Davison, Russell Lee	*ab*	*No. Billerica*	Paige, 1
Dillingham, Paul	*ab*	*Bridgeport, Conn.*	Θ Δ X House
Dohanian, Senekerim Mardiros	*bs*	*W. Somerville*	*72 Cedar St.*
Dole, John Walter	*ab*	*Enfield, N. H.*	West, 4
Eastman, Fred Cecil	*e*	*Swampscott*	West, 10
Faden, James Leatherbee	*e*	*Waltham*	West, 22
Fillmore, Millard Asa	*e*	*Stow*	East, 21
Ford, Frederick William, Jr.	*e*	*Tufts College*	A T Ω House
Foss, Clarence Wardwell	*e*	*W. Lynn*	West, 10
French, Joseph Allen	*e*	*Waltham*	East, 18
Garabedian, Carl Arshak	*e*	*Dorchester Centre*	Paige, 27
Gardella, John Louis	*e*	*Brookline*	*115 Washington St.*
Gardner, Herbert Whiting	*e*	*W. Medford*	*77 Warren St.*
Geer, Everett Austin	*e*	*Three Rivers*	A T Ω House
Greenbaum, Arthur	*bs*	*Beachmont*	East, 22
Grupe, Howard Edwin	*e*	*New Canaan, Conn.*	Dean, 1
Gurvin, John Edward	*e*	*Somerville*	*606 Broadway*
Hall, Walton Shepard	*ab*	*Malden*	*23 Park St.*
Harvey, Will Calvin	*ab-bd*	*Newfane, Vt.*	Paige, 17
Hayward, Alfred Webster	*e*	*W. Somerville*	*5 Windom St.*
Hill, Ralph Weston	*e*	*Peabody*	Commons Club
Hurley, William Joseph	*e*	*Belmont*	*20 Cross St.*
Jackson, Henry Olin	*e*	*Southbridge*	West, 14
Kearns, William Henry	*e*	*Waverley*	*88 Beech St.*
Kelley, Walter Leonard	*e*	*Arlington*	Δ T House
Kett, Timothy Justin	*e*	*Fair Haven, Vt.*	East, 1
Kindred, James Ernest	*bs*	*So. Boston*	*613 E. 7th St.*
Loomis, Glenn Moore	*e*	*Goff's Falls, N. H.*	Paige, 33
MacPherson, Edmund Stow	*bs*	*Maynard*	East 29
Magee, Joseph Vincent	*e*	*So. Boston*	East, 1
Marshall, Edward Lester	*e*	*Lynn*	East, 19
Mastrangelo, Michael Joseph	*e*	*Boston*	East, 11

Maulsby, Francis Ayer	*ab*	*Tufts College*	Dean, 9
Miller, Everett Burton	*e*	*Meriden, Conn.*	West, 2
Monighan, Joseph Albert	*e*	*E. Boston*	*65 Brooks St.*
O'Meara, Francis	*e*	*Brighton*	*72 Mapleton St.*
O'Neill, Carroll Charles	*e*	*Allston*	West, 12
Palumbo, Emilio Leonard	*e*	*Boston*	East, 11
Porter, Frederick Wadsworth	*bs*	*Springfield*	Dean, 10
Power, Harold James	*e*	*Everett*	*18 Clinton St.*
Powers, Clarence Schlayer	*e*	*Meriden, Conn.*	East, 19
Prentiss, Joseph Adams	*e*	*Belmont*	*206 Prospect St.*
Proctor, Percy Maynard	*bs*	*N. Cambridge*	Z Ψ House
Ramsay, Harold Southwood	*e*	*Portland, Me.*	West, 31
Rice, Perley Augustus	*e*	*W. Somerville*	*33 Claremon St.*
Rindge, Wellington	*bs*	*Cambridge*	Θ Λ X House
Rutter, Josiah Baldwin	*e*	*Waltham*	East, 18
Sanborn, Ray Conway	*e*	*Dorchester*	West, 9
Sanerib, Jacob	*e*	*Roxbury*	Paige, 15
Savage, Harold Richardson	*bs*	*Medford*	Δ Υ House
Scott, Clinton Lee	*ab-bd*	*Newport, Vt.*	Paige, 24
Shea, Thomas Arthur	*e*	*Stoneham*	East, 5
Shiels, Joseph Daniel	*e*	*Boston*	East, 5
Silverman, Max	*e*	*Dorchester*	*26 Lawrence Park*
Smith, Parker Bradstreet	*bs*	*Auburn, Me.*	Dean, 9
Smith, Stanley Howard	*e*	*Dedham*	*1 Ashcroft St.*
Smith, William Paine	*ab*	*Beverly*	Α Τ Ω House
Stafford, Roland Grover	*e*	*Attleboro*	Α Τ Ω House
Stewart, Arthur David	*e*	*Hopkinton*	389 Boston Ave.
Stone, Roger Barton	*ce*	*Jamaica Plain*	*26 Grovenor Rd.*
Street, John Bryden	*e*	*Medford*	Δ Υ House
Sturtevant, Leon Josiah	*bs*	*Lexington*	*3 Hancock Ave.*
Talbot, Geoffrey Wanstall	*e*	*Tufts College*	*11 Edison Ave.*
Tegan, Michael Joseph, Jr.	*e*	*Charlestown*	*23 Green St.*
Terhune, Howard Haven	*e*	*Dorchester*	East, 21
Thacher, Lester Enoch	*bs*	*Dorchester*	Α Τ Ω House
Torrey, William Henshaw	*e*	*Cambridge*	*7 Waterhouse St.*
Tower, Henry Edward	*bs*	*Hudson*	Α Τ Ω House
Towsley, Frank Hathaway	*ab*	*Washington, Vt.*	West, 4
Whippen, Joseph Gordon	*e*	*E. Lynn*	Σ Τ Α House
Whittemore, Francis Dyer	*e*	*Everett*	West, 16½

Freshman Class

Abbott, Robert Leon	*e*	*West Medford*	*95 Monument St*
Aldrich, Lloyd Edgar	*ab*	*Rutland, Vt.*	Dean, 2
Angell, George William	*bs*	*Syracuse, N. Y.*	West, 13

Archibald, Harry Cameron	*e*	*Everett*	*9 Hawthorne St.*
Armington, Ralph Loud	*e*	*Everett*	*15 Hampshire St.*
Babcock, Lester Fowler	*bs*	*Lynn*	Paige, 3
Ball, Lester Whiting	*e*	*Somerville*	*21 Melvin St.*
Barnes, Maxwell Fish	*ch*	*W. Somerville*	*77 Lexington Ave.*
Barron, Ralph Avery	*bs*	*Wellesley Hills*	Dean, 4
Bathrick, Orrin Freeborn	*e*	*Tufts College*	*15 Emery St.*
Bennett, William Joseph	*e*	*W. Medford*	*65 Lincoln St.*
Bickford, Lawrence Wenzell	*e*	*Somerville*	*70 Highland Ave.*
Billingham, Arthur	*bs*	*Jamaica Plain*	*15 Goldsmith St.*
Bisbee, John Bancroft	*ab-bd*	*Arlington Heights*	Paige, 16
Boothby, Everett James	*e*	*Somerville*	*95 Pearl St.*
Bowlby, Stanley	*ab*	*Somerville*	East, 13
Brooks, William Gooch	*bs*	*Dorchester Centre*	Paige, 10
Brown, James Lawrence, Jr.	*e*	*Somerville*	*89 Morrison Ave.*
Burritt, Henry Way	*bs*	*Detroit, Mich.*	Dean, 11
Carter, Herbert Melville	*bs*	*Norwood*	East, 15
Chapman, Wilder Adams	*bs*	*Brighton*	*50 Brooksdale Rd.*
Claff, Elmer Louis	*e*	*Everett*	*160 Chestnut St.*
Clavell, Antonio Cepero	*bs*	*Ponce, Puerto Rico*	11 Appleton St., Somerville
Cohen, William	*bs*	*Boston*	*18 Poplar St.*
Comee, Edgar Randolph	*e*	*Cliftondale*	East, 23
Cram, John Frederick	*e*	*Melrose*	*40 Hancock St.*
Curren, Francis Collum Joseph	*e*	*Boston*	*124 Hyde Park Ave.*
Dana, Alan Standish	*e*	*Portland, Me.*	West, 21
Danver, Alan Thurston	*e*	*Glenbrook, Conn.*	East, 2
Demeritt, John Edgar	*e*	*Boston*	East, 14
Donovan, Joseph William	*bs*	*Dorchester*	*12 Bellflower St.*
Easter, Robert S.	*ab*	*W. Somerville*	*27 Milton St.*
Eldredge, Earle Bertram	*e*	*So. Harwich*	East, 30
Ellis, Frederick Joseph	*e*	*Somerville*	*43 Quincy St.*
Emerson, Carl	*e*	*Hartford, Conn.*	Dean, 3
Feeley, Edward	*bs*	*Brookline*	*23 Babcock St.*
Felker, John Clarence Rea	*ab*	*Burlington, Iowa*	1 Arnold Circle, Cambridge
Field, Herbert Vaughan	*bs*	*W. Somerville*	Θ Δ X House
Files, James Holden	*ab*	*Portland, Me.*	Paige, 34
Fiske, Warren Munroe	*e*	*Mexico City*	West, 5
Fittz, Raymond Underwood	*e*	*Natick*	East, 16
Flett, James Watson	*bs*	*Waverley*	*596 Trapelo Rd.*
Fox, Erving Nelson	*e*	*W. Somerville*	*123 College Ave.*
Gendron, Courtenay Holbrook	*ab*	*Winchester*	*22 Calumet Rd.*
Giles, Harold Edgar	*e*	*Somerville*	*177 Washington St.*

Godfrey, Archiebald Joseph	*bs*	*Swampscott*	East, 32
Gough, John Harold	*e*	*Dorchester*	*31 Larchmont St.*
Gould, Charles Thomas	*e*	*Cambridge*	*35 Tufts St.*
Harmon, Clarence Edward	*bs*	*Portland, Me.*	West, 31
Harrington, Ralph Dudley	*e*	*Somerville*	*26 Oak St.*
Harrison, James William	*e*	*East Walpole*	East, 16
Hewitt, Earl Smith	*ab*	*So. Royalton, Vt.*	East, 34
Hinchcliffe, Paul George	*e*	*Stoneham*	*8 East St.*
Hodges, Theodore Warren	*bs*	*Lynn*	Dean, 12
Holland, Gordon Fraser	*e*	*Revere*	*54 Dehon St.*
Horn, Albert Mathias	*e*	*Roslindale*	*103 Ardale St.*
Houston, Clarence Preston	*bs*	*Methuen*	Paige, 8
Hunnewell, William	*e*	*W. Somerville*	Paige, 11
Hussey, William Horner	*e*	*Danvers*	East, 7
Jameson, Charles Franklin	*e*	*W. Somerville*	*57 Lowden Ave.*
Jeffress, James Alfred	*bs*	*West Medford*	*37 Lincoln St.*
Jones, Percival	*bs*	*Medford*	*15 Bellevue St.*
Jones, Walter Leverett	*e*	*Somerville*	*8 Pleasant Ave.*
Kelley, Wilfred Frederick	*ab*	*Roxbury*	*1 Arcadia St.*
Knowlton, Benjamin Almy	*bs*	*W. Newton*	West, 21
Kopchovsky, Simon	*bs*	*New York, N. Y.*	Paige, 26
Lawson, Walter Axel	*ch*	*Cambridge*	*176 Pleasant St.*
Leach, Henry Stewart	*e*	*Brookline*	Dean, 2
Leahy, John Henry	*ab*	*Monson*	East, 13
Lee, Bernard James	*ab*	*Irasburg, Vt.*	Dean, 14
Levethan, Samuel Theodore	*bs*	*Manchester, N. H.*	East, 33
Lindstel, Carl Frederick	*bs*	*Revere*	*84 Endicott Ave.*
Lybeck, Robert Ferdinand	*bs*	*Everett*	East, 25
Maguire, James Bernard	*e*	*E. Boston*	*233 Saratoga St.*
Marzynski, Philip	*bs*	*Dorchester*	*9 Leroy St.*
McAdoo, Myron Holder Ward	*bs*	*Cambridge*	*278 Harvard St.*
Mendelsohn, Louis Edward	*e*	*Roxbury*	West, 27
Merrithew, Francis Marion Blaisdell	*e*	*Saugus*	East, 9
Messer, Melvin John, Jr.	*e*	*Somerville*	*27 Franklin St.*
Metcalf, Herbert Edmond	*bs*	*Winchester*	*3 Crescent Rd.*
Mitchell, Walter Edward	*e*	*Newport, Vt.*	West, 13
Moore, Charles Edward	*e*	*Peabody*	East, 9
Morison, Frederick Stanley	*bs*	*W. Somerville*	*2 Billingham St.*
Morrison, Arthur Winchester	*ab*	*Medford*	*101 Magoun Ave.*
Moses, Eliot Brewster	*e*	*Waltham*	*Worcester Lane*
Mota, Joas Ignacio Silveira da	*e*	*S. Paulo, Brazil*	*95 Curtis St., W. Somerville*
Neale, John Arthur	*e*	*Cliftondale*	*15 Felton St.*
Nelligan, Henry Philip	*bs*	*Cambridge*	*413 Washington St.*

Newton, Raymond Willis	*e*	*Winter Hill*	*27 Everett Ave.*
Papen, George William	*bs*	*Roxbury*	*80 Thornton St.*
Peabody, William Tyler	*e*	*Melrose*	*50 Florence St.*
Pease, Maxfield	*e*	*Tufts College*	*205 College Ave.*
Perkins, Kaler Alfred	*e*	*E. Saugus*	East, 23
Peterson, Leon William	*e*	*Everett*	*15 Carter St.*
Phillips, Arthur Welch	*bs*	*Somerville*	*10 Prospect Hill Ave.*
Phillips, Ralph Oliver	*bs*	*Somerville*	*10 ProspectHill Ave.*
Poor, Joseph Victor	*e*	*Salem, Mass.*	West, 3
Porter, Leslie Ross	*e*	*Peabody*	Dean, 13
Pratt, Kenneth Madison	*bs*	*Winchester*	*15 Wildwood St.*
Prescott, Clarence Dean	*ab*	*Haverhill*	East, 29
Priest, Henry Benjaman	*ab*	*Irasburg, Vt.*	East, 34
Rice, Virgil Allen	*e*	*Cambridge*	*58 Fayerweather St*
Richardson, William Blaine	*bs*	*Fisher's Island, N. Y.*	East, 26
Richmond, Justin Fulton	*e*	*South Boston*	135 I St.
Ricker, George Alvan	*bs*	*South Poland, Me.*	Dean, 12
Robbins, Roger Sherman	*bs*	*E. Pepperell*	Paige, 32
Rosenkovitz, Edward	*e*	*E. Boston*	*197 Chelsea St.*
Rourke, Francis William	*e*	*Somerville*	*71 Electric Ave.*
Schlotterbeck, William Charles	*e*	*Roxbury Station, Connecticut*	26 Conwell Ave., Somerville
Shorrock, John William	*e*	*Dorchester*	*39 Longfellow St.*
Smith, Robert Ashley	*ab*	*Hardwick, Vt.*	Dean, 14
Snow, Herbert Endicott	*e*	*Brooklyn, N. Y.*	East, 31
Stanger, Herbert Theophilus	*e*	*Roslindale*	*140 Newburg St.*
Starkweather, Courtney Nash	*bs*	*Plainfield, N. J.*	West, 28
Stone, Hugh Chaffee	*e*	*Jamaica Plain*	*26 Grovenor Rd.*
Sullivan, Harry Matthew	*bs*	*Ayer*	West, 1
Swan, Reuben	*e*	*Dorchester Centre*	East, 26
Taylor, Irving Proctor	*bs*	*Somerville*	*15 Howe St.*
Teel, Lawrence Howes	*e*	*Salem*	West, 3
Thorndike, Kinsley Barrett	*e*	*Medford*	*68 Harvard St.*
Tolman, Ellsworth Baker	*e*	*New Bedford*	131 Ashmont St., Dorchester
Tonkonow, Benjamin	*ab*	*Meriden, Conn.*	East, 33
Tukey, Norman Stanford	*ab*	*Somerville*	East, 4
Turner, Nelson Webster	*bs*	*Ayer*	West, 1
Ulin, Benjamin	*e*	*Roxbury*	*37 Fort Ave.*
Wagner, Paul Barr	*e*	*Brooklyn, N. Y.*	East, 31
Waldron, Arthur Scott	*e*	*W. Somerville*	*135 Powder House Boulevard*
Walkup, Jr., Charles Sumner	*ab*	*Roxbury*	*11 Crawford St.*
Walsh, Louis Joseph	*e*	*Charlestown*	*8 Lincoln St.*

Ward, Benjamin Alpheus Jr.,	*e*	*W. Somerville*	*22 Milton St.*
Webber, Lewis Gleason	*e*	*Bedford*	*Main St.*
Whitney, Donald Hay	*bs*	*W. Somerville*	*38 Wallace St.*
Wilton, Carl Andrew	*bs*	*W. Somerville*	East, 27
Wood, Robert Earle	*e*	*Orange*	Paige, 21
Woode, Alva Vivian	*ab*	*Kingston, Jamaica*	Commons Club

Special Students

Allen, Windom Alpheus I. *Medical Preparatory*	*W. Cummington*	East, 15
Currier, Paul Leslie I. *History and Economics*	*Everett*	*11 Locust St.*
Fisher, Herbert Robson I. *Music*	*W. Somerville*	*26 Hancock St.*
Kennedy, Joseph Clark I. *Medical Preparatory*	*Haverhill*	47 Forest St., Medford
Smith, Wayne Carrington II. *Economics*	*Meriden, Conn.*	Dean, 1

Supplementary List

[Students present during 1910-11, but not appearing in the catalogue]

Shinn, Philip Allen	*ch e*	*Tufts College*	*Bellevue St.*
Thorndike, Allston Kinsley	*ce*	*Medford*	*68 Harvard St.*

Bromfield-Pearson School

Batease, Henry Herbert	*Springfield, Vt.*	19 University Ave.
Burnham, John Harris	*Hingham*	
Ginn, David Clifton	*Dennisport*	8 Willow Ave., W. Somerville
Holden, Thomas Francis	*Randolph*	*Depot St.*
Jameson, Robert	*Revere*	*28 Olive St.*
Kearney, Paul Thomas	*Lowell*	*142 Third St.*
Locke, Edwin Augustus	*Belmont*	*25 Somerset St.*
Macks, William Arthur	*Beverly*	East, 7
Nicoll, George Wesley	*Boston*	*104 Gainsboro St.*

Theological School

FOUR-YEAR COURSE

Fourth Year

Smith, Walter Delos	*Peabody*	*Foster Hotel*

Third Year

Robertson, William Forbes	*Arlington*	Paige, 31

SIX-YEAR COURSE

Sixth Year

Blagbrough, Vernon Edmund, S.T.B.	*Orange*	Paige, 18

Third Year

Gaskin, William	*Stafford, Conn.*	Paige, 25

Second Year

Harvey, Will Calvin	*Newfane, Vt.*	Paige, 17
Scott, Clinton Lee	*Newport, Vt.*	Paige, 24

First Year

Bisbee, John Bancroft	*Arlington Heights*	Paige, 16

Special Students

Hale, Arthur Thomas	*Lawrence*	Paige, 19
Mann, Horatio Gardner	*Rockland*	Paige, 36
Rose, William Wallace	*Philadelphia, Pa.*	Paige, 30
Scott, Harold Guy Don	*Newport, Vt.*	Paige, 23

Jackson College

Senior Class

Bradford, Edith Harriet	*ab*	*W. Somerville*	*272 Summer St.*
Brooks, Marion Louise	*ab*	*W. Medford*	*47 Auburn St.*
Entwistle, Dorothy Russell	*ab*	*Everett*	*55 Harvard St.*
Fuller, Lena Frances	*ab*	*Everett*	*63 Cottage St.*
Henry, Marjorie Leslie	*ab*	*Jamaica Plain*	*79A Sheridan St.*
Huntington, Frances Willard	*ab*	*Lynn*	*64 Tudor St.*
Lamprey, Pauline Adriana	*ab*	*Medford*	*11 Fulton St.*
Longley, Pearle Emogene	*ab*	*Winchester*	Metcalf, B
Spear, Alice Josephine	*ab*	*Hyde Park*	Start, 3
Vande Bogart, Edith Marguerite	*ab*	*Bearsville, N. Y.*	14 Winthrop St., Winchester
Woodbury, Edna Currier	*ab*	*Somerville*	*9 Howe St.*

Junior Class

Berthold, Louise Anna	*ab*	*Saugus*	*392 Main St.*
Chapin, Octavia	*ab*	*Medford*	*102 Summer St.*
Colby, Marion Adeline	*ab*	*Hillsboro, N. H.*	Metcalf, 13
Dodd, Mary Helen	*bs*	*Lexington*	Metcalf, 15
Field, Abby Howard Rugg	*ab*	*Tufts College*	Metcalf, 7
Gray, Inez Marion	*ab*	*Portsmouth, N. H.*	Richardson, 11
Green, Marion Adelaide	*ab*	*Everett*	*35 Dean St.*
Greenberg, Rose	*ab*	*W. Somerville*	*18 Rogers Ave.*
Jones, Elaine	*ab*	*Tufts College*	*15 Bellevue St.*
Lenhart, Edith Rose	*ab*	*Bedford*	Richardson, 4
Owler, Isabella Gertrude	*ab*	*Somerville*	*30 Browning Rd.*
Penniman, Ruth Evelyn	*ab*	*Peabody*	Start, 4
Ritchie, Effie May	*ab*	*W. Somerville*	Metcalf, A
Sanborn, Edith May	*ab*	*Amesbury*	Start, 3
Scammon, Helen Rachel	*ab*	*Stratham, N. H.*	Metcalf, 12

Sophomore Class

Bartlett, Dorothy	*ab*	*Lynn*	Richardson, 8
Buck, Margaret	*ab*	*Lexington*	*20 Forest St.*
Cameron, Isabella	*ab*	*Arlington*	*59 Mt. Vernon St.*
Cobb, Gladys Lydia	*ab*	*Mansfield*	Start, 5
Dyer, Gertrude Weston	*ab*	*Provincetown*	Metcalf, 2
Eveleth, Emily	*ab*	*Little Falls, N. Y.*	Start, 4

Fallis, Ethel Hazel	*bs*	*W. Somerville*	Metcalf, 4
Hooper, Anne Leslie	*ab*	*Tufts College*	*124 Professors Row*
Hulen, Emma	*bs*	*Cliftondale*	Richardson, 1
Kagan, Frances	*ab*	*Roxbury*	*39 Stanwood St.*
Lovejoy, Esther Lizzie	*ab*	*W. Somerville*	*62 Rogers Ave.*
Macy, Ella Hazel	*ab*	*Winter Hill*	*3 Miner St.*
Phillips, Etta Marion	*bs*	*Lowell*	Metcalf, B
Roberts, Marjorie	*ab*	*Reading*	Metcalf, 6
Scamman, Eleanor Margaret	*ab*	*Lexington*	*76 Bedford St.*
Shepard, Aurilla Myrtle	*ab*	*Mansfield*	Start, 5
Smith, Lilian Cora	*ab*	*Exeter, N. H.*	Metcalf, 12
Wedge, Ruth Paris	*ab*	*Lowell*	Richardson, 3
Wells, Edna Frances	*ab*	*Roslindale*	Richardson, 7

Freshman Class

Anderson, Mildred Elvera	*ab*	*Stronghurst, Ill.*	Metcalf, 3
Butler, Helen Louise	*bs*	*W. Medford*	*17 Irving St.*
Cate, Esther Safford	*ab*	*Barre, Vt.*	8 Teele Ave., W. Somerville
Cavanaugh, Mary Eleonor	*bs*	*W. Lynn*	*13 Cedar St.*
Clarke, Geraldine Kendall	*ab*	*Ogdensburg, N. Y.*	Metcalf, 11
Cochran, Edith Elizabeth	*ab*	*Bath, Me.*	Richardson, 1
Cragin, Bernice Willette	*ab*	*W. Somerville*	*38 Conwell Ave.*
Crocker, Helen Beatrice	*bs*	*Portland, Me.*	Start, 1
Dailey, Mary Elizabeth	*bs*	*Lexington*	*State Road*
Davey, Katherine Teresa	*ab*	*Lawrence*	*26 Buswell St.*
Davis, Beatrice Labaree	*ab*	*Webster*	Metcalf, 9
Davis, Marion Hill	*ab*	*Marlborough*	Metcalf, 11
Fessenden, Margaret Tebbetts	*bs*	*Ashfield*	Metcalf, 1
Gerry, Gladys Eleanor	*ab*	*Sudbury Centre*	
Greenwood, Rena Mae	*bs*	*Medford*	*347 Main St.*
Hea, Margaret Hildred	*ab*	*Medford*	*85 Summer St.*
Hearsey, Helen Elizabeth	*ab*	*Gleasondale*	Metcalf, 2
Hooper, Gertrude Mellen	*ab*	*Tufts College*	*124 Professors Row*
Houghton, Dorothy Taylor	*ab*	*No. Andover*	Start, 7
James, Dorothy	*ab*	*Somerville*	*123 College Ave.*
Jobin, Anna Carleton	*bs*	*Bethlehem, N. H.*	138 Medford St., Charlestown
Johnson, Edith Harriet	*ab*	*Andover*	Start, 6
Keith, Gladys Ethlya	*ab*	*Tufts College*	*3 Capen St.*
MacKnight, Annette Bassford	*ab*	*New York City, N. Y.*	Metcalf, 10
Moyer, Pauline	*bs*	*Hartford, Conn.*	Metcalf, 6
Nichols, Marian Bill	*ab*	*Hathorne*	Richardson, 5
Peabody, Ethel Lorinda	*ab*	*W. Somerville*	*80 Wallace St.*

Pulsifer, Alice Cook	*ab*	*Plymouth, N. H.*	Start, 1
Rockwell, Grace Margaret	*ab*	*W. Somerville*	*133 Powder House Boulevard*
Rowse, Dorothea	*ab*	*Arlington*	*127 Medford St.*
Schofield, Jeannette Irene	*ab*	*Forest Hills*	Richardson, 3
Seavey, Ruth Eliza	*bs*	*W. Somerville*	*762 Broadway*
Shepard, Ruth	*ab*	*Wakefield*	Metcalf, 16
Siebert, Margaret	*ab*	*Hyde Park*	Richardson, 6
Towsley, Lena Gertrude	*bs*	*Washington, Vt.*	22 Kidder Ave., W. Somerville
Wallis, Ruth	*ab*	*Fall River*	Metcalf, 14
Waterman, Charlotte Jane	*ab*	*Tufts College*	Metcalf, C
Whitehouse, Ruth Lida	*ab*	*Somerville*	*182 Highland Ave.*
Wiley, Alma Gertrude	*ab*	*W. Somerville*	*761 Broadway*

Special Student

Wyman, Grace Elizabeth	*W. Somerville*	
II. *Music*	*148 Powder House Boulevard*	

Supplementary List

[Students present during 1910–11, but not appearing in the catalogue.]

Liberty, Dorothy Ethel	*sp*	*Tufts College*	*389 Boston Ave.*
MacKnight, Annette	*bs*	*New York, N. Y.*	Metcalf, 6
Wyman, Grace Elizabeth	*sp*	*W. Somerville*	*148 Powder House Boulevard*

Medical School

[P. O. Address, 416 Huntington Ave., Boston, Mass.]

Fourth Year

Albert, Lionel Louis . . . . . *Malden*
Allard, Carlton Eugene . . . . . *Allerton, Iowa*
Ayers, Charles Elton . . . . . *Taunton*
Barney, Willis Oliver . . . . . *Boston*
Barrier, Emile August . . . . . *Cambridge*
Barrow, Allen Rogers . . . . . *Chelsea*
Benway, Charles Alfred . . . . . *Somerville*
Bicknell, Ralph William . . . . . *Canton, Me.*
Brown, Chester Perkins . . . . . *Cambridge*
Brown, Ralph Neally . . . . . *Meredith, N. H.*
Brunelle, Arthur Lord . . . . . *New Bedford*
Brunick, Patrick Vincent . . . . . *S. Boston*
Burack, Abraham . . . . . *Roxbury*
Burrell, Harry Cutter . . . . . *Medford*
Church, Claude Henry . . . . . *Cambridge*
Clarke, Willis Earl . . . . . *Portland, Me.*
Cleary, Robert Emmett . . . . . *Holyoke*
Colwill, Albert William . . . . . *Boston*
PHARM.D. (Mass. Coll. Ph.)
Corvese, Anthony, PH.G. (R. I. Coll. Ph.) . . *Providence, R. I.*
Couch, Mary Catherine . . . . . *Somerville*
Coursey, Frank Rudolph . . . . . *Boston*
Courtney, Thomas Joseph . . . . . *Worcester*
Cummings, Frank Anthony . . . . . *Providence, R. I.*
Curran, John Francis . . . . . *Wheelwright*
Cutler, Myron Fred . . . . . *W. Somerville*
Davis, Charles Frank, Jr. . . . . *Littleton, N. H.*
DeWolf, Charles Wentworth . . . . . *Somerville*
Dickson, Ellsworth Joseph Murray . . . . . *Somverville*
Dunbar, Edgar Joseph . . . . . *Pawtucket, R. I.*
Duncan, Stanley Forbes . . . . . *Wollaston*
Espejo, Gonzalo . . . . . *Merida, Yucatan, Mexico*
Finkel, Samuel Paul . . . . . *Boston*
Finkelstein, Nathan . . . . . *Boston*
Forhan, Neil Kittredge . . . . . *Canton, Me.*
Forrest, Erle D. . . . . *Springfield*

Fraim, Irving William . . . . . *Waltham*
Garry, George . . . . . *Chelsea*
Gervais, Harriet Marion . . . . . *Westboro*
Giles, William Benard . . . . . *W. Somerville*
Glunts, David . . . . . *Roxbury*
Greenblatt, Hattie . . . . . *Providence, R. I.*
Gwynne, Samuel Carlton . . . . . *Melrose*
Haley, William Thomas . . . . . *Marblehead*
Howard, Irma Ruth . . . . . *Boston*
Jakmauh, Paul John . . . . . *S. Boston*
Jordan, Harmon Paul Buffum . . . . . *Lincoln, R. I.*
Judd, Ernest Hart . . . . . *W. Hartford, Conn.*
Kelley, Lawrence Kendall . . . . . *Haverhill*
Kiley, Daniel Joseph, Jr. . . . . *Peabody*
Kinsella, Michael Allen . . . . . *Franklin*
Knowles, Edward Augustine . . . . . *Revere*
Locke, Harry Leslie Franklin . . . . . *Hudson*
MacNaughton, Cordelia Isabella . . . . . *Boston*
MacQueen, James Alen . . . . . *Boston*
Madden, John Joseph, Jr. . . . . *Waltham*
Marcus, Jacob . . . . . *Boston*
Martin, Harold Winthrop . . . . . *Dorchester*
McGann, Pierce Powers . . . . . *Somerville*
McLaughlin, Arthur Otis . . . . . *Haverhill*
McWeeny, Bernadette Marie . . . . . *Somerville*
Middleton, Willis Pearl . . . . . *No. Weymouth*
Millett, Frank Alburtus . . . . . *Lynn*
Monaghan, Mary Frances . . . . . *Waltham*
Mulvanity, John Joseph . . . . . *Nashua, N. H.*
Murphy, Daniel Francis . . . . . *Waltham*
Mysel, Philip . . . . . *Roxbury*
O'Brien, Edward Joseph, Jr. . . . . *E. Boston*
Partington, Cyrus Brown . . . . . *Fall River*
Remich, Sumner Haven . . . . . *Reading*
Robinson, Horace Eddy . . . . . *Bradford*
Scott, Norman McLean . . . . . *Melrose*
Segall, Samuel Kelman . . . . . *Stoughton*
Sheridan, Philip Edward Anthony, A.B., 1908 . *S. Boston*
Spinney, Frederic Ira . . . . . *Somerville*
Sproat, William Delano . . . . . *Everett*
Stamp, Floyd R. . . . . *Alliance, Ohio*
Stone, Henry Edward . . . . . *S. Boston*
Sullivan, Charles Joseph . . . . . *Brockton*
Sweet, John Henry Throop, Jr. . . . . *Hartford, Conn.*

Tobey, Henry Pratt . . . . . *Great Barrington*
Tully, George William . . . . . *Southbridge*
Turetzky, William Leo . . . . . *Dorchester*
Weatherbee, George Bradford . . . . . *Lee, Me.*
Wellington, Anna Colburn . . . . . *Boston*

Third Year

Allen, Arnold Noble . . . . . *Roslindale*
Armitage, Henry George . . . . . *Haverhill*
Bagnall, Elmer Stanley . . . . . *Roslindale*
Bass, Harris . . . . . *Plymouth*
Bishop, William Atkins . . . . . *Somerville*
Brady, Cecil Norbert . . . . . *Boston*
Brosius, Otto Tiemann . . . . . *Belleville, Ill.*
Brown, Alfred Whittemore . . . . . *Quincy*
Browne, William Edward . . . . . *Roxbury*
Cabeceiras, Henry Joseph . . . . . *Somerville*
Caldicott, Francis Stephen . . . . . *Milford*
Chamberlin, Harold Augustus . . . . . *N. Abington*
Chronquest, Alfred Peter . . . . . *Boston*
Clarke, Mary Ella . . . . . *Ward Hill*
Comstock, Fred Walter . . . . . *New Haven, Conn.*
Connor, Harold James . . . . . *Woodstock, N. B.*
Costello, James Francis . . . . . *Wollaston*
Covey, Clyde Benjamin . . . . . *Buffalo, N. Y.*
Cowles, Dwight . . . . . *Beverly*
Cullen, Charles Andrew . . . . . *Hyde Park*
Currin, Francis Walter . . . . . *Peabody*
Downie, Charles DeVaudry . . . . . *Boston*
Felch, George Alfred . . . . . *Ayer*
Flynn, John Henry . . . . . *Salem*
Friedman, Benjamin . . . . . *Boston*
Friedman, Eli . . . . . *Boston*
Gilmore, Lewis Daniel . . . . . *Exeter, N. H.*
Goetschius, Percy Berry . . . . . *New York, N. Y.*
Grogan, Margaret Victorine . . . . . *W. Swanzey, N. H.*
Guthrie, Andrew Doherty . . . . . *Roxbury*
Harney, Robert Edwin . . . . . *Dorchester*
Hassman, David Morris . . . . . *Boston*
PHARM.D. (Phila. Coll. Ph.)
Jensen, William Christian . . . . . *Worcester*
Kenney, John Francis . . . . . *New Bedford*
Kenworthy, Marion Edwena . . . . . *Middletown, Conn.*
Leary, Alfred James . . . . . *Gilbertville*

Lemay, Alfred Mederic . . . . . *Marlboro*
Lennon, John Marcus Henry . . . . . *Jamaica Plain*
Levek, Joseph . . . . . *Lawrence*
Lyle, Eveline Burton, A.B. (Mt. Holyoke) . . *Gloucester*
MacKenzie, James Alexander . . . . . *Louisville, N. S.*
MacLeod, Emily Clark . . . . . *Boston*
Marsh, Harold Edward . . . . . *Quincy*
McGill, Chester Francis . . . . . *Marlboro*
McPherson, Sidney Horace . . . . . *Roxbury*
Metcalf, Richard . . . . . *Providence, R. I.*
Moncrieff, William Armitage . . . . . *New Bedford*
Moore, Mary Teresa Veronica . . . . . *Roxbury*
Phaneuf, Louis Eusebe . . . . . *Ware*
PHARM.D. (Mass. Coll. Ph.)
Rabinovitz, Bernard . . . . . *Malden*
Reed, Beatrice Alma . . . . . *S. Boston*
Roderick, Charles Elvin . . . . . *Taunton*
Simmons, Ralph Hayward . . . . . *Brockton*
Thoennes, Matthew Nicholas . . . . . *Dorchester*
Varrell, William Walton . . . . . *York Harbor, Me.*
Ventrone, Anthony Caesar . . . . . *Providence, R. I.*
PH.C. (R. I. Coll. Ph.)
Wainshel, Perez William . . . . . *Lynn*
Wheet, Harry Ray . . . . . *N. Cambridge*
Wilson, Charles Henry . . . . . *Chelsea*
Wright, Arthur Clarendon . . . . . *W. Somerville*
Young, Edward Wallace . . . . . *Taunton*

Second Year

Allen, Harold Musgrave . . . . . *Boston*
Andrews, Benjamin Franklin . . . . . *Worcester*
Atwood, Blanche Louise . . . . . *Whitman*
Barry, John Joseph . . . . . *Lawrence*
Basch, William Eustis Russell . . . . . *Roxbury*
Baxter, Clarence Pennell . . . . . *Boston*
Berlin, Maurice George . . . . . *Dorchester*
Berman, Myer . . . . . *Boston*
Burke, John Henry . . . . . *Rockland*
Caines, Richard John Ridgway . . . . . *Boston*
Carpenter, Robert John . . . . . *Winchester*
Clapp, Roger Irving (D.M.D.) . . . . . *Dorchester*
Clow, Henry Leon . . . . . *East Wolfeboro, N. H.*
Cutler, Raymond William . . . . . *Worcester*
Davis, Henry Levi . . . . . *Lynn*

Deacy, John Joseph . . . . . *Lawrence*
Driscoll, Robert Ellsworth . . . . . *Cambridge*
Elkin, Samuel Nathaniel . . . . . *Dorchester*
Finkelstein, Isadore Albert . . . . . *Lynn*
Flynn, Thomas Stephen . . . . . *Woonsocket, R. I.*
Freeman, Benjamin Lawrence . . . . . *Brockton*
Gallant, Alfred Edward, A.B. (St. Ann's) . . *Waltham*
Garry, John Joseph . . . . . *Methuen*
Ghazarian, Garabed Sarkis . . . . . *Boston*
A.B. (Central Turkey Coll.)
Gooding, John Harold . . . . . *Boston*
Gunter, Fred Clarke . . . . . *Somerville*
Healey, Bernard Charles . . . . . *Boston*
Heap, Richard Dunham . . . . . *Fall River*
Hynes, Fred Henry . . . . . *New Haven, Conn.*
Jennings, John Greenwood . . . . . *Jewett City, Conn.*
Johnson, Herbert Lester Charles . . . . . *Brookline*
Jones, Guy Walter Stanley . . . . . *Waltham*
Kemp, Lysander Schaffer . . . . . *N. Cambridge*
Kempton, Whitman Tupper . . . . . *Newton Upper Falls*
Kennington, Henry Carter . . . . . *Boston*
Kewer, Leo Thomas . . . . . *Waverley*
Killam, Franklin Harrison . . . . . *West Somerville*
King, Drue . . . . . *Augusta, Ga.*
Klein, George . . . . . *Roxbury*
Laliberte, Elie Joseph . . . . . *Spencer*
Largay, Arthur Owen . . . . . *Bangor, Me.*
Levine, Harry Benjamin . . . . . *Boston*
Levy, Benjamin George . . . . . *Medway*
Logiodice, Leonard Francis . . . . . *Tyler City, Conn.*
MacDonald, Paul Sydney . . . . . *Dorchester*
MacIntyre, William Angus . . . . . *West Roxbury*
MacKay, William Henry . . . . . *Waltham*
Macomber, Clarence Alden . . . . . *Pittsfield, Me.*
Mann, David Edwin . . . . . *Norfolk*
Margolis, Barney Joseph . . . . . *New Bedford*
Martin, William Richard . . . . . *Spencer*
McCoart, Richard Felix, Jr. . . . . *Rumford, R. I.*
McIntosh, Jennie Grace . . . . . *Winchendon*
Merrill, Everett Albert . . . . . *Bridgton, Me.*
Meyers, Hyman Bernhard . . . . . *Chelsea*
Miniter, Francis Gabriel . . . . . *Medford*
O'Brien, John Charles . . . . . *Greenfield*
Osborn, Stanley Hart . . . . . *Peabody*

Paglia, Jeremiah James . . . . . *Boston*
Pavlides, Socrates Yakovos . . . . . *Boston*
Pigott, Arthur . . . . . *Winthrop*
Pratt, Emily Adelaide . . . . . *Roxbury*
Quirk, Richard Charles . . . . . *Bristol, R. I.*
Raymond, Albert Orville . . . . . *Brockton*
Record, Harold Roland . . . . . *E. Braintree*
Regan, James Joseph . . . . . *S. Boston*
Regan, William Francis . . . . . *Chelsea*
Rodriguez, Enrique . . . . . *Barranquilla, Colombia, S.A*
Rogers, John Andrews . . . . . *Nashua, N. H.*
Ryder, Walter Irenaeus . . . . . *S. Boston*
Sewall, Edgar Floyd . . . . . *Greenland, N. H.*
Silva, Savero Pacheco . . . . . *New Bedford*
Silverman, Louis Serebriany . . . . . *Boston*
Simonds, Frederick Artemas . . . . . *Wakefield*
Smith, Edwin Eugene . . . . . *Waltham*
Smith, William Francis . . . . . *Malden*
Sullivan, Elizabeth Ann . . . . . *Winchendon*
Sullivan, Frank Cornelius . . . . . *Lawrence*
Thornton, Fred Francis . . . . . *Brighton*
Trachtenberg, Julius Caesar . . . . . *Boston*
Walsh, Patrick Henry . . . . . *Fall River*
Weber, Willis Fletcher . . . . . *S. Wales, N. Y.*
Wheatley, Frank Edward . . . . . *N. Abington*
Whitney, Leroy Danforth . . . . . *Boston*
PH.C. (R. I. Coll. Ph.)
Woodside, John Nelson . . . . . *Cambridge*
Woodward, LeRoy Albert . . . . . *Pawtucket, R. I.*
PH.G. (R. I. Coll. Ph.)

First Year

Adams, Winthrop . . . . . *Cambridge*
Alley, Leon Arthur . . . . . *Brockton*
Angier, Harlan Wesley . . . . . *Oakham*
Armstuong, Charles Medville . . . . . *Calais, Me.*
Barron, Maurice Edward . . . . . *Cambridge*
Barry, Thomas Matthew . . . . . *Lynn*
Bearse, Carl . . . . . *Boston*
Beaudet, Elphege Alcime, B.S. (Laval) . . . *Newmarket, N. H.*
Bennett, Ernest Floyd . . . . . *Ansonia, Conn.*
Birdsall, Clarence Harlow . . . . . *Lawrence*
Bresnihan, Frank Nesdel . . . . . *Cambridge*
Burns, John Edward . . . . . *Natick*

Burton, William Ellsworth . . . . . *Danielson, Conn.*
Butler, Alice Etta . . . . . *Stoneham*
Butler, David Mathew . . . . . *Brockton*
Coen, Michael . . . . . *Boston*
Cosby, Edwin Gordon . . . . . *Derby Line, Vt.*
Costello, Joseph Edward . . . . . *Pawtucket, R. I.*
Cox, Oscar Francis, Jr. . . . . *N. Weymouth*
Cunningham, Richard Augustine . . . . . *Lynn*
Curry, William Joseph . . . . . *Charlestown*
Dennett, Paul Carroll . . . . . *Portsmouth, N. H.*
Dine, Harold Irwin . . . . . *Roxbury*
Douglas, Samuel Monroe . . . . . *Post Mills, Vt.*
Dunn, Joseph Henry . . . . . *Rockland*
Dutton, Frank Kingsley . . . . . *Westerly, R. I.*
Elkind, Henry Byron . . . . . *Worcester*
Erlenbach, James Hill . . . . . *Dorchester*
Fobes, Howard Edward . . . . . *Whitman*
Fregeau, Aime Napoleon . . . . . *Fall River*
Friederman, Louis Elie . . . . . *Boston*
Geary, Francis Henry . . . . . *Danvers*
Granata, Tancredi Grovanni . . . . . *Providence, R. I.*
Green, Archibald Forest, D.V.S. (N. Y. Univ.) *Rockland, Me.*
Green, Harold Russell . . . . . *Somerville*
Guralnick, Rubin . . . . . *East Boston*
Hart, Francis Denbroeder . . . . . *Bridgewater*
Hart, Louis Park . . . . . *Marlboro*
Heywood, Nathaniel Jewett . . . . . *Westboro*
Hodgkins, Edward Marshall . . . . . *Dorchester*
Hopner, Sadie . . . . . *Lowell*
Jewett, Everett Porter . . . . . *Gardner*
Johnson, Goodwin Adolph . . . . . *Keene, N. H.*
Jones, Fred Durgin . . . . . *Dorchester*
Jones, Thomas Paul . . . . . *Roxbury*
Kaitz, Harry . . . . . *Boston*
Kane, William Vincent . . . . . *Lynn*
Keenan, James Alphonsus . . . . . *Lynn*
Koplin, Harry . . . . . *Windsor Locks, Conn.*
LaCoste, Stanley James . . . . . *Malden*
LeClair, Hormidas Homer Zeus . . . . . *Fall River*
Leith, Richard Bliss . . . . . *Greenfield*
Lynch, Joseph Michael . . . . . *Dorchester*
MacGray, Charles Leverne . . . . . *Melbourne, N. S.*
Madden, John James . . . . . *Charlestown*

Mahoney, John Francis . . . . . *New Bedford*
Margeson, Reginold Dimock . . . . . *Westwood*
McCabe, John Edward . . . . . *North Attleboro*
McCarthy, Charles Daniel, Jr. . . . . *Malden*
McClintock, Elsie . . . . . *Rochester, N. Y.*
McCormick, William Aloysius . . . . . *Fall River*
McDonald, Harry Leo . . . . . *Attleboro*
McKiernan, Robert Lewis . . . . . *New Haven, Conn.*
McNeil, William . . . . . *E. Boston*
Memin, Mary Towler . . . . . *Cambridge*
Mott, George Ernest . . . . . *Malden*
Muldoon, Agnes Catharine . . . . . *East Somerville*
Muldoon, Mary Theresa . . . . . *East Somerville*
Murphy, Harold Alphonsus . . . . . *St. John, N. B.*
Murphy, Joseph William Patrick . . . . . *Salem*
O'Brien, Thomas Joseph . . . . . *Westboro*
O'Reilly, Francis Augustine . . . . . *Lawrence*
Papavasilion, Vasilios Konstantinos . . . . . *Fanario, Karditsa, Greece*
Persky, Myer . . . . . *Malden*
Potter, Edgar Sayles . . . . . *Chepachet, R. I.*
Rafferty, Thomas Bernard . . . . . *Lynn*
Rapoport, Boris . . . . . *Boston*
Robins, Samuel Alexander . . . . . *Dorchester*
Rosen, Kermit Charles . . . . . *Dorchester*
Salerno, Louis Francis . . . . . *East Boston*
Sandler, Frank Fishel . . . . . *Revere*
Scanlon, Joseph Michael . . . . . *Lawrence*
Schaffer, Louis Harold . . . . . *Roxbury*
Schwartz, George Harvey . . . . . *East Boston*
Scott, David Miller, A.B. (Lincoln University) *Augusta, Ga.*
Shinn, Philip Allen . . . . . *Tufts College*
Silverman, Max . . . . . *Woonsocket, R. I.*
Smith, Percival Lathrop . . . . . *Boston*
Starr, Lucy Margaret . . . . . *Dorchester*
Sullivan, Robert Thomas . . . . . *S. Boston*
Sypher, Edna Newell . . . . . *South Braintree*
Thomas, Everett Onslow . . . . . *St. Stephen*
Tripp, John Henry, A.B. (Lincoln University) *Boston*
Ullian, Louis Joseph . . . . . *Boston*
Wadden, Joseph Mathew . . . . . *Cambridge*
Walsh, William Joseph . . . . . *New Britain, Conn.*
Whitcomb, Clarence Adelbert . . . . . *Malden*
Wright, Willard Lyman . . . . . *Keene, N. H.*

Special Students

Pope, Arch Edwin, M.D. . . . . *St. Joseph, Mo.*
Reynolds, Priscilla Munroe, ... *Boston*
Worcester, Isabelle Hanson . . . . . *Dorchester*

Post-Graduate

Ingraham, Elizabeth, M.D. . . . . *W. Somerville*
Nicholl, William Boyd, M.D. . . . . *Oakland, Calif.*

Dental School

[P. O. Address, 416 Huntington Ave., Boston, Mass.]

Third Year

Bruce, Francis Bradshaw . . . . . *Shelburne, N. S.*
Carter, Walter James . . . . . *Pembroke, Me.*
Christman, George . . . . . *Cambridge*
Cleaves, Chester Evander . . . . . *Montpelier, Vt.*
Costello, Peter . . . . . *Pawtucket, R. I.*
Crowley, Daniel Joseph . . . . . *Charlestown*
Dailey, James William . . . . . *Cambridge*
Ekdahl, Adolph Gustavus . . . . . *Nashua, N. H.*
Ekdahl, Harold Gustavus . . . . . *Nashua, N. H.*
Fair, George Francis . . . . . *Natick*
Fitzgerald, Richard Joseph . . . . . *Montpelier, Vt.*
Foley, George Arthur . . . . . *Winchester*
Grady, Anthony Bonaventure . . . . . *Clinton*
Greenbaum, Randolph Damon . . . . . *Revere*
Greene, Harry Augustus . . . . . *Cambridge*
Harvey, Walter Francis . . . . . *Everett*
Haskell, Clarence Murray . . . . . *Newton Highlands*
Haskell, Edmund Gallop . . . . . *Beverly*
Hayes, Arthur Warren . . . . . *Lynn*
Kearney, John Joseph, PH.B. (Holy Cross) . *Worcester*
Kinley, Edward Albert, Jr. . . . . *Cliftondale*
Kramer, George . . . . . *Boston*
Ladrigan, Daniel Vincent . . . . . *Roslindale*

Landers, Michael Augustine . . . . . *Lawrence*
Larkin, Richard Booth . . . . . *Haverhill*
Leary, Timothy Francis . . . . . *Springfield*
Leftovith, Henry Hyman . . . . . *Boston*
March, Richard Conrad . . . . . *Sandy Creek, Me.*
Messer, William Reuben . . . . . *Elbridge, N. Y.*
Monahan, George Augustus . . . . . *Houlton, Me.*
Mulcahy, Richard James, A.B. (Villanova) . . *N. Cohasset*
Mulrey, Beatrice Eulalia . . . . . *Cambridge*
Olin, Louis . . . . . *Roxbury*
Peavey, Harry Clothey . . . . . *Bangor, Me.*
Randall, Howard Bowen . . . . . *Wrentham*
Reilly, Harvard James . . . . . *Hartford, Conn.*
Sedgwick, Willard Eaton . . . . . *E. Greenwich, R. I.*
Shedd, Harold Woodbury . . . . . *Taunton*
Spencer, Charles Shackford . . . . . *Brookline*
Springer, Simon Harry . . . . . *Boston*
Staincliffe, John Joseph . . . . . *Fall River*
Stearns, Hyman . . . . . *Boston*
Taylor, William Dimon . . . . . *Norridgewock, Me.*
Tirk, Nathan Herbert . . . . . *Boston*

Second Year

Ahern, John Joseph, Jr. . . . . *Cambridge*
Allen, Henry Roy . . . . . *Lynn*
Bachelder, Eugene Earle . . . . . *Gardiner, Me.*
Bernstein, Barnett . . . . . *Lowell*
Briggs, Carl Skillings . . . . . *S. Paris, Me.*
Brown, Manson Daniel . . . . . *Detroit, Me.*
Brown, Mark Mendell . . . . . *Roxbury*
Browne, Louis . . . . . *West Lynn*
Bugler, Andrew Philip . . . . . *Quincy*
Cadorette, Louis Henry . . . . . *Turners Falls*
Canarie, Martin Charles . . . . . *Haverhill*
Cassidy, Gregory Philip . . . . . *Houlton, Me.*
Cheney, Joseph Edward . . . . . *Leominster*
Clement, Dwight Richardson . . . . . *Saco, Me.*
Cogan, Alfred Valentine . . . . . *South Boston*
Cohen, Benjamin David . . . . . *Haverhill*
Corry, Robert Joseph . . . . . *Woburn*
Cosgrove, Michael Edward . . . . . *Worcester*
Cunningham, James Edward, Jr. . . . . *Worcester*
Curtis, George William . . . . . *Everett*
Davies, James William . . . . . *Pictou, N. S.*

Davis, Raymond Merrill . . . . . *Lynn*
Dickens, Willard Lee . . . . . *Camden, Me.*
Dixon, Mildred Gordon . . . . . *Worcester*
Donovan, William Dacey . . . . . *Wakefield*
Doyle, Joseph James . . . . . *Fall River*
Dunne, Michael Joseph . . . . . *Rockland*
Fleming, Lewis James . . . . . *Fairville, N. B.*
Fogg, Albion Rowell . . . . . *Littleton, N. H.*
Fowler, Milburn Matthew . . . . . *Skowhegan, Me.*
Gale, Charles Romandel . . . . . *East Orange, N. J.*
Gerrish, George Henry . . . . . *Spencer*
Gibbons, William Francis . . . . . *Clinton*
Gile, Holland . . . . . *Keene, N. H.*
Hammond, Harry Smith . . . . . *Burlington, Vt.*
Hart, Harold Francis . . . . . *Dorchester*
Hobart, Paul Crawford . . . . . *Somersworth, N. H.*
Howe, Rufus Joseph . . . . . *Spencer*
Hoye, Frederic Joseph . . . . . *New Bedford*
Huntoon, Raymond Philip . . . . . *Natick*
Jantzen, Joseph William . . . . . *Lowell*
Kelliher, Robert James . . . . . *Springfield*
Kelly, Joseph Anthony . . . . . *Boston*
King, John Leo . . . . . *Newton Highlands*
Ladieu, Peter Eugene . . . . . *Newport, N. H.*
Lamb, Harold Robbins . . . . . *Greenfield*
Lan, Maurice . . . . . *Worcester*
Lockwood, Arthur Dodge . . . . . *Merrimac*
Looney, Michael Francis . . . . . *Lawrence*
Luce, Carlton Lee . . . . . *N. New Portland, Me.*
Luck, Emily Mary . . . . . *Cambridge*
Marshall, Lloyd Francis . . . . . *Newtonville*
McDonald, Thomas Anthony . . . . . *South Boston*
Melincoff, Abram Edward . . . . . *Lawrence*
Metters, Ralph Henry . . . . . *Attleboro Falls*
Moise, Joseph Max . . . . . *Holyoke*
Morris, Frederick Edward . . . . . *Lowell*
Moulton, Carroll Parsons . . . . . *Ossipee, N. H.*
Murray, Cornelius Joseph . . . . . *Prides Crossing*
Nalchajian, John . . . . . *Chelsea*
Nash, Harold Edward . . . . . *Westboro*
O'Brien, William Ahern . . . . . *Greenfield*
O'Connor, Harry Newman . . . . . *Revere*
O'Connor, William James . . . . . *Spencer*

O'Donnell, Roger Joseph . . . . . *S. Boston*
Ozon, Wallace Walter . . . . . *Boston*
Parker, Ralph Joseph . . . . . *W. Swanzey, N. H.*
Pierce, Michael Charles . . . . . *Boston*
Plaisted, Lester Hunkin . . . . . *Concord, N. H.*
Plummer, Gordon Leslie . . . . . *Cambridge*
Porter, Harry Wallace . . . . . *Roxbury*
Redden, Joseph Eugene . . . . . *Springfield*
Regnier, Joseph Augustine . . . . . *Lenox*
Rice, Mark John . . . . . *Somerville*
Riley, William Aloysius . . . . . *Lawrence*
Rounds, Samuel Dean . . . . . *Reading*
Savage, Peter Joseph . . . . . *Whitinsville*
Shaw, Arthur John . . . . . *Victoria, N. B.*
Silver, John Leo . . . . . *Lynn*
Slein, Owen Patrick . . . . . *Wheelwright*
Spratt, Robert Alexander . . . . . *Boston*
Stevens, Dean Clayton . . . . . *Franconia, N. H.*
Stolworthy, Ralph . . . . . *Providence, R. I.*
Sullivan, Joseph Francis . . . . . *Dorchester*
Tracy, Norman Hutchinson . . . . . *Jewett City, Conn.*
Traynor, William Bernard . . . . . *Biddeford, Me.*
Veale, Thomas Herbert . . . . . *Quincy*
Walker, Forrest Stanley . . . . . *Saco, Me.*
Walsh, Henry Patrick . . . . . *Whitinsville*
Wass, Alfred Seldon . . . . . *Prospect Harbor, Me.*
Webb, Edmund Martin . . . . . *Attleboro*
Webster, Karl Smith . . . . . *Orleans, Vt.*
Willey, Leon Bartlett . . . . . *Middletown, Conn.*
Williams, Floyd Elbert . . . . . *Manchester, N. H.*
Willis, Frank Adelbert . . . . . *South Boston*
Wilson, John Chester . . . . . *Beverly*

First Year

Baraban, Israel . . . . . *Everett*
Beckman, Roger Parker . . . . . *Gloucester*
Bergan, William Michael . . . . . *Hingham*
Bernstein, Bernard Joseph . . . . . *Portland, Me.*
Blanchard, John Marion Cornelius . . . . . *Charlottetown, P. E. I.*
Bohaker, Karl Aubrey . . . . . *Somerville*
Bonnell, Percival Lincoln . . . . . *St. John, N. B.*
Brass, Arthur Jake . . . . . *Roxbury*
Brown, Harold Walter . . . . . *Lynn*
Burke, Samuel Joseph . . . . . *Providence, R. I.*

Carignan, Arthur Martin . . . . . *Somersworth, N. H.*
Carroll, John Leo . . . . . *Canton*
Clements, George Edward . . . . . *Taunton*
Clifton, Joseph Howarth . . . . . *Fall River*
Collins, Arthur Eugene . . . . . *Melrose*
Courtney, Charles Stephen . . . . . *Manchaug*
Cousins, Lee Roy . . . . . *W. Somerville*
Covell, Percival Wentworth . . . . . *Brockton*
Curtin, Timothy James . . . . . *Norwood*
Danforth, Harold Eugene . . . . . *Madison, Me.*
Desmond, Joseph Michael . . . . . *Cambridge*
Eagan, John Patrick . . . . . *West Newton*
Everson, Leon Walter . . . . . *Hanson*
Feeley, John Henry . . . . . *Franklin*
Fisher, Ernest Morton . . . . . *Somerville*
Fitzpatrick, Edward Ambrose . . . . . *Medford*
Foley, William Fergus . . . . . *Holyoke*
Gabeler, Charles Pierce . . . . . *Lawrence*
Gallagher, James Bernard . . . . . *Rockland*
Gaw, Albert James . . . . . *Cambridge*
Gibbons, Martin Francis . . . . . *Clinton*
Ginns, Max . . . . . *Worcester*
Goldberg, Samuel . . . . . *Dorchester*
Gould, Clifton Spurling . . . . . *Dorchester*
Grady, Clarence Leander . . . . . *Clinton*
Greany, Timothy Joseph . . . . . *Fall River*
Griffin, Ralph Henry . . . . . *Medford*
Gussman, Hayward William . . . . . *Londonderry, N. H.*
Harding, Harry Osborne . . . . . *Stoneham*
Herlihy, John Edward . . . . . *Fitchburg*
Himmer, Richard Frank . . . . . *Lawrence*
Johnson, Edward Albert, Jr. . . . . *Lawrence*
Johnson, Guy Lloyd . . . . . *Littleton, N. H.*
Johnson, Robert Kidder . . . . . *Lynn*
Kelley, Joseph Michael . . . . . *Watertown*
Kilbride, Patrick Lawrence . . . . . *Malden*
Kingsley, Victor Joseph . . . . . *Kingston, Ontario*
Knox, Henry Rollins . . . . . *Chelsea*
Lane, Clark Walter . . . . . *Biddeford, Me.*
Lanergan, Harry Clement . . . . . *Roxbury*
Laurie, John Warren . . . . . *Somerville*
Lavien, Leo Himan . . . . . *Worcester*
Levitt, Henry Salick . . . . . *Boston*
Lewis, Minott White . . . . . *W. Somerville,*

Lichtenstein, William Isidore . . . . . *Roxbury*
Lombard, John Blase . . . . . *Charlestown*
Maher, William Henry . . . . . *Brockton*
Maker, Samuel . . . . . *Fall River*
Manning, Joseph Aloysius . . . . . *Roxbury*
Mayo, Harold William . . . . . *Winthrop*
McCoart, Charles Carroll . . . . . *Rumford, R. I.*
McGann, Philip Sheridan . . . . . *Somerville*
McGrath, James Francis . . . . . *Brookline*
McKinnon, Frederic William Thomas . . . . *Dorchester*
McPherson, William Alexander . . . . . *Clarktown, P. E. I.*
Miller, Ralph Henry . . . . . *Dorchester*
Mitchell, Marks . . . . . *Brockton*
Molloy, Charles William . . . . . *Hudson*
Moore, Hugh Louis . . . . . *Swampscott*
Morgner, August Herman . . . . . *Clinton*
Murphy, William Lawrence . . . . . *Dover, N. H.*
Olson, Walter Raymond . . . . . *S. Manchester, Conn.*
O'Neil, William Thomas, Jr. . . . . *Amesbury*
Payton, Charles Henry . . . . . *Brockton*
Pearlin, Harry . . . . . *Boston*
Perman, John Gabriel . . . . . *Boylston*
Peterson, Edwin William . . . . . *Rockport*
Pierce, Helen Chic . . . . . *New Bedford*
Pulsifer, Leon Wilson . . . . . *Norton, Vt.*
Ray, Harry Eugene . . . . . *Greenville, Me.*
Reid, George Bartlett . . . . . *Holyoke*
Rich, Robert Raymond . . . . . *Maynard*
Rooney, James Henry . . . . . *Lowell*
Rowlandson, Janet Mary . . . . . *Lowell*
Ryan, Arthur Bliss . . . . . *Medfield*
Sanderson, Melville Alexander . . . . . *Waltham*
Scher, Emmanuel . . . . . *Roxbury*
Scott, Errol Merle . . . . . *Danforth, Me.*
Searle, Harold Sinclair . . . . . *Worcester*
Sibley, Henry Robert . . . . . *Bradford*
Simm, Fred Emil . . . . . *Waverley*
Small, Roydon Larrabee . . . . . *Biddeford, Me.*
Stahl, Herrmann Hanson . . . . . *Chelsea*
Stalker, Harry LeBaron . . . . . *Holbrook*
St. Andre, Arthur Oliver . . . . . *Boston*
Staples, Lawrence Milton . . . . . *Newington, N. H.*
Sullivan, Jeremiah Joseph . . . . . *Milford*
Sullivan, Joseph Edward . . . . . *Melrose*

Tartre, Joseph Armand . . . . . *Biddeford, Me.*
Weinberger, Isidor . . . . . *E. Somerville*
Whalen, William Patrick . . . . . *Adams*
Whitham, Edward Henry . . . . . *New Bedford*
Wight, Clarence . . . . . *Belfast, Me.*
Yale, Henry Isadore . . . . . *Salem*

Special Students

Beazley, Ernest Valentine . . . . . *Providence, R. I.*
Branigan, George Henry . . . . . *Natick*
Brown, Guy Edward . . . . . *West Somerville*
Carlson, Torsten Axel . . . . . *Dorchester*
Clark, John Locke . . . . . *Valley Falls, R. I.*
Danforth, George Arthur . . . . . *Manchester, N. H*
Dupuis, Hector Mederic . . . . . *Worcester*
Finkelstein, Joseph . . . . . *Roxbury*
Foster, Robert Chesley . . . . . *Dorchester*
Gately, Edward John . . . . . *Marlboro*
Griffin, Samuel Frederic . . . . . *Portsmouth, N. H.*
Griffin, William Henry, Jr. . . . . *South Boston*
Hurley, William Patrick . . . . . *South Boston*
Jackson, Gordon Francis . . . . . *Dorchester*
Jones, Louis Franklin . . . . . *Somerville*
Kaston, Louis . . . . . *Boston*
Keith, James Harold . . . . . *Bridgewater*
Levenson, Myron . . . . . *Dorchester*
Long, Daniel Simon . . . . . *Boston*
McMahon, Henry John . . . . . *Woburn*
Merrill, Ernest Samuel . . . . . *Wollaston*
Morin, Joseph Emile . . . . . *Lawrence*
Pinsky, David . . . . . *Medway*
Qualters, Martin Wilfred . . . . . *Ashuelot, N. H.*
Roberts, Jacob Frederick . . . . . *Medford*
Ryan, Edmund Clement . . . . . *Pawtucket, R. I.*
Ryder, Harry Clifford . . . . . *Boston*
Sanborn, John Stevens . . . . . *Woburn*
Tierney, James Francis . . . . . *Dorchester*

Post Graduate

Peloquin, Hester Lord, D.M.D. . . . . *Southbridge*

SUMMARY

Trustees		29

CORPS OF INSTRUCTION

Emeritus	4	
President and Professors	51	
Associate Professors	4	
Assistant Professors	18	
Lecturers	7	
Instructors	86	
Demonstrators	2	
Assistant Demonstrators	8	
Assistants	43	
Total engaged in work of instruction	—	223
Other Officers, not previously counted		41

STUDENTS

GRADUATE SCHOOL		8
SCHOOL OF LIBERAL ARTS:		
Senior	15	
Junior	19	
Sophomore	25	
Freshman	64	
Special	5	—128
ENGINEERING SCHOOL:		
Senior	35	
Junior	47	
Sophomore	56	
Freshman	71	—209
CRANE THEOLOGICAL SCHOOL		11
JACKSON COLLEGE:		
Senior	11	
Junior	15	
Sophomore	19	
Freshmen	39	
Special	1	— 85
MEDICAL SCHOOL:		
Fourth Year	84	
Third Year	61	
Second Year	86	
First Year	98	
Special	3	
Post-Graduate	2	—334
DENTAL SCHOOL:		
Third Year	44	
Second Year	96	
First Year	104	
Special	29	
Post-Graduate	1	—274
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Total registration of students		1058
Names appearing twice		7
Total number of students		1051

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Announcement of Jackson College
Register of Officers and Graduates